Manitoba Medical Review

Vol. 32 MARCH, 1952 No. 3

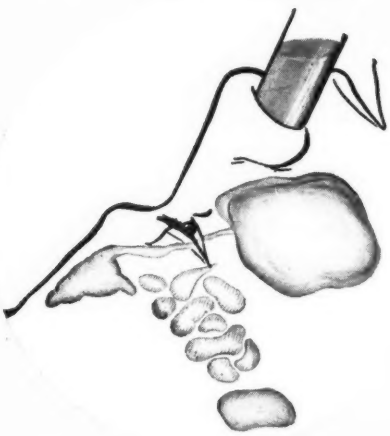
Refresher Course, April 14 to 18, Program Page 132

antibiotic

decongestive

treatment of sinusitis

Neo-Synephrine® Penicillin



Since most of the organisms responsible for sinusitis belong to the penicillin-sensitive group,[1] this antibiotic is well suited for topical therapy in this condition.[2]

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1. Putney, J. F.: Sinus Infection, in Conn, H. J.: Current Therapy 1951. Philadelphia, W. B. Saunders Co., 1951, p. 71.

2. Craig, S. L.: *New York State Jour. Med.*, 49:181, Jan. 15, 1949.

3. Woodward, F. D., and Holt, T.: Local Use of Penicillin in Infections of the Ear, Nose and Throat. *J.A.M.A.*, 129:589, Oct. 27, 1945.

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443 Sandwich Street, West, Windsor, Ont.

The Manitoba Medical Review

Vol. 32 MARCH, 1952 No. 3

Cardiology

Preoperative Cardiovascular Appraisal of Patients*

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The evaluation of the cardiovascular status of a patient is a traditional prerequisite of any contemplated surgical procedure involving general or any other form of anaesthesia. One must decide first of all whether the heart and circulation are normal on a physical or other form of examination; and one should make enquiries as to whether the patient has or has not any cardiovascular symptoms or complaints even though the examination may reveal nothing of an abnormal character. There are patients who may be unaware that anything is wrong with their hearts or circulation but who on careful enquiry, may be found to suffer from certain symptoms that have (too often) been misinterpreted as of gastric, intestinal, neuralgic, myalgic or arthritic origin.

These are the patients that one must carefully appraise and more carefully evaluate before surgery or anaesthesia is contemplated. Individuals with any or all of the symptoms must be looked upon as cases of probable coronary insufficiency until proved otherwise. They are usually those whose ages range between 40 and 70 years or over, sometimes but more rarely they are under 40 years of age.

Not infrequently one is called upon to examine the heart and circulation of patients complaining of acute abdominal distress, who are unaware of anything wrong with their hearts, and who are being prepared by the surgeon for operation for an acute abdominal condition. These cases must be carefully screened for evidences of coronary sclerotic changes or insufficiencies. Others may present evidences of acute right-heart failure with engorged livers. Still others have symptoms that are the result of sudden acute attacks of arrhythmia such as acute fibrillation. Others again may present evidences of active carditis or acute specific or non-specific pericarditis.

Many of these cardiovascular states will be accompanied by, or be ushered in with, symptoms which at times are very often confused with those of acute surgical conditions of the abdomen and often present a difficult problem in diagnosis. Careful enquiry into the history of these and the proper appreciation of the complaints which antedated the acute onset will in many cases clarify the situation. In many one should resort to the electrocardiograph before deciding whether the condition is of cardiac or intra-abdominal character, as the physical examination except perhaps for the accompanying tachycardia may be entirely normal.

The findings of an abnormal heart or vascular system does not preclude anaesthesia or operation provided, of course, that the patient has not had any idiosyncrasy to a previous anaesthetic. That is if a patient has undergone a previous operation under either local or spinal anaesthesia and has shown evidences of sensitivity to the agents used then of course, this type of anaesthetic should not be administered again. Similarly, if the patient has reacted badly to ether, chloroform or nitrous oxide or pentothal on a previous occasion, then one must resort to some other form of narcosis.

It is well to remember, also, in dealing with individuals in the older age groups who present apparently normal cardiovascular systems, that many of these have some arterial or arteriolar changes and one should caution the anaesthetist that improper oxygenation during the period of operation may result in the development of abnormal rhythms such as fibrillation, flutter, tachycardia or even varying degrees of heart-block. A drop in the systemic blood pressure during the operation may ensue as the result not only of anoxia but also from loss of blood and from reflex effects during the surgical manipulations which may tend to promote intra-arterial clotting either in the vessels of the heart, the brain, the kidney or other branch of the general arterial tree.

At the same time one should caution against the use of ephedrin or pituitrin at the time of the operation in these patients, particularly if anoxemia is present, as these substances may only further impair the already impoverished coronary blood flow. In the pre-operative medications given to patients not only with normal cardiovascular systems but others I should like to emphasize that, today, it would appear that too often surgeons are inclined to over-dose their patients with opiates, hyoscine or other sedative drugs before operations in order to allay apprehension and fear, and to promote ease in anaesthetic induction. This pre-operative medication often acts to the detriment of the patient. If one is confronted with an unexpected collapse of the circulation during the operation, as these drugs tend to reduce the

*Presented at the Annual Meeting of the Manitoba Medical Association, Winnipeg, October 9th, 1951.

sensitivity of the vasomotor centre in the medulla thus precluding resuscitation measures. If spinal anaesthesia is decided upon it is not infrequently found that the surgeon has ordered morphine beforehand and the combined effects may in many cases produce a decided drop in systemic pressure which will be irreversible.

Now let us consider those patients with organic heart disease who have to undergo anaesthesia and operation. Are these all to be considered poor surgical risks? They are not poor surgical risks and for practical purposes the compensated heart which permits a reasonably normal if somewhat restricted way of life is as virtually capable of handling a major operation and a general anaesthetic as a normal heart and the surgical mortality rate is not substantially higher. In the presence of heart failure or other serious manifestations of active heart disease, however, the evaluation of the surgical indication as against the surgical risk often presents a difficult problem. The surgical indication is usually a more important factor than the presence or absence of heart disease in deciding upon an operative procedure: but insofar as cardiac disease adds to the surgical risk, both the status of cardiac function and the etiological type of heart disease are determining factors.

In general there is statistical evidence to indicate that rheumatic heart disease is associated with a lower surgical mortality rate than arteriosclerotic coronary heart disease or syphilitic cardiovascular disease. Rheumatic heart disease, as you know, will usually be manifest either in the form of mitral or aortic valvular disease in the form of stenosis or insufficiency of these valves with or without an associated enlargement of the heart. If the heart presents evidences of an appreciable increase of size then one must determine the status of myocardial efficiency and note whether there are associated signs or symptoms of either left—or right-heart congestive failure. Enlarged hearts denote myocardial damage or change, due either to hypertrophy or to dilatation, the result of strain and/or disease. At times many of these cases of rheumatic carditis may present various associated arrhythmias such as in the cases presenting mitral stenosis with insufficiency, less often are those of aortic valve states unless these latter are in the older age groups when one may possibly have varying degrees of coronary sclerotic disease as well. These cases may then have varying disturbances of conduction either of the A-V or of the intraventricular types which may cause alterations in the character of the heart sounds, i.e., varying gallop character sounds so commonly associated with these forms of heart block.

If one should find evidence of active disease in those presenting signs of old rheumatic heart disease it would be well to postpone any elective forms of operation until the manifestations of active infection have subsided. On the other hand if the operation is of a more urgent kind then one must be prepared to proceed with surgery, utilizing the local or spinal forms of anaesthesia in preference to the inhalation types as they are better tolerated. If congestive failure is present then one should fortify the heart with appropriate digitalis therapy beforehand, during and following the operation; and should emphasize to the anaesthetist that full oxygenation of the blood should be maintained. Another condition frequently superimposed upon the more chronic forms of rheumatic disease (as well as congenital abnormalities) is that which is recognized as subacute or acute bacterial endocarditis. These cases today, thanks to the therapeutic value of the antibiotics, may be operated upon during the course of active disease without the serious risks which they offered previously. It is well, however, in such cases to postpone elective operation until bacteremia is overcome. But if the case is one demanding immediate surgery it may be undertaken provided the operation is not too prolonged, great blood loss is avoided, and provided that anoxemia is guarded against.

Diseased hearts due to syphilis may present fairly typical clinical pictures either of normal or of enlarged organs and both may be found to have signs of involvement of the aortic valve, either in the early stages of the infection, simply as a very soft diastolic blowing murmur heard best along the left sternal margin, or simply as a loud tambour like sound as well as a variably intense blowing systolic murmur without any accompanying thrill. These signs if found in younger individuals (under 40 years of age) with positive blood serology and who do not have hypertension or other diseases to account for them, may be looked upon as manifestations of cardiovascular lues. In these cases of syphilis one must also determine whether the first part of the ascending aorta is involved or not because this finding only further aids in corroborating the etiology. The dilated aorta may possibly be percussed as an enlargement of the transverse diameter of the great vessels at the base of the heart, but in most will be unappreciated clinically and only apparent on the x-ray film or fluoroscopic screen.

Symptomatic evidence of syphilitic involvement of the heart is most commonly characterized by pain of an anginal character, and also by dyspnoea either upon exertion or at rest. Today, due to the early antibiotic treatment of syphilitic infections we are not seeing the numbers of cardiovascular cases that we saw 25 years ago, but it still behooves us to be on the lookout for early signs of cardiovascular involvement. We cannot be absolutely sure as yet whether our present penicillin therapy will eradicate this form of cardiovascular disease. Ordinarily it has required

some 15 to 25 years after the initial infection for these evidences to become apparent.

Cases of hypertension present themselves for operation but in these there are not any great problems of any great moment. One must, however, attempt to elucidate the factors concerned in the cause of the elevation of the blood pressure remembering the possibility of renal disease, urinary obstruction, hyperthyroidism, cerebral causes or diabetes. To rule in or not any of these factors, of course, is important before subjecting a patient to anaesthesia or operation. It is also of value to appreciate the reaction of the heart to the hypertensive state, to take cognizance of whether it has shown any features indicating any signs of failure, remembering, too, that the early manifestations of such are dyspnoea, persistent or periodic in form, nocturnal in character and cough with or without orthopnoea all of which are evidences of failure of the left ventricle. One must also inquire from the history whether symptoms indicating impaired coronary blood flow have ever been, or are at present, complained of.

Full appreciation of these findings in regard to the heart of hypertensives is important before subjecting them to operation and anaesthesia, while the presence of an impaired myocardium as in other conditions will influence one whether to operate or delay, and which form of anaesthesia is best to employ. Uncomplicated essential hypertension tolerates anaesthesia and operation well as witnessed in the low mortality in prolonged operations of sympathectomies on this type of case.

Frequently the finding of a hypotensive state may be recorded and this in the minds of many may be construed as a contraindication for anaesthesia or operation. In such cases, as with those hypertensives referred to, one should attempt to determine, if it is possible, the cause underlying this low-blood pressure state. Conditions of the body most commonly associated with low systemic blood pressures are anemia, shock, hypothyroidism, Addison's and Simmon's diseases, certain central nervous system states and, most recently, post-sympathectomies. A failing or congestive cardiac may also exhibit a low blood pressure but there will be other more apparent signs. Hypotension per se is not a contraindication to operation. Factors, however, entering into its production may require either attention or correction before surgery in many cases should be advised. Anoxemia, blood loss and surgical shock, however, must be avoided.

An irregular heart action deserves some attention before anaesthesia or operation is considered. The common irregularity of an extrasystolic type for the most part offers no difficulty to either anaesthesia or operation but one should remember that in an arrhythmia of this character accompanying heart rates of 90 beats or more per minute may indicate coronary sclerosis and insufficiency. This form of irregularity may at times also be a forerunner, particularly under anaesthesia or anoxemia of paroxysms of tachycardia. This eventually may be offset and at times overcome by the preoperative administration of quinidine. Paxoxysmal tachycardia should also be stopped by quinidine or digitalis or other appropriate therapy before undertaking an operation or administering an anaesthetic.

Considering another very common arrhythmia, i.e., auricular fibrillation or flutter one must first of all decide whether these arrhythmias have been present for some time previously or whether they are of more recent origin. If of recent origin, then a possible anterior infarction may be responsible and an attempt may be made with Quinidine to restore the rhythm to normal; but failing this, one then should digitalize until the apex rate falls between 70 to 90 beats per minute. If a permanent form of fibrillation is found to be present one must decide then whether the circulation is well controlled or compensated and also whether there is a pulse deficit. If evidences of congestion are found and/or a pulse deficit exists then proper therapy with digitalis must be instituted before advising anaesthesia or operation.

The finding of an irregular heart action due to dropped beats or a partial heart block deserves some attention also. If this should be a manifestation of an active carditis then operation must be postponed, if non-urgent but on the other hand when the surgical implications are of an urgent character, then one should avoid anoxemia during operation and should also avoid shock. These cases may also be greatly helped by the judicious use of some form of digitalis even though this may cause a complete block or complete A-V dissociation. Complete heart block in itself is no contraindication to anaesthesia or operation provided it is not associated with a state of congestive failure. If evidences of failure exist then digitalis must be administered and operation delayed if possible until compensation is restored. Emergency operations, however, may be proceeded with, if anoxemia, again is avoided and the surgical procedures are done expeditiously.

Bundle branch lesions are not considered to be contraindications to anaesthesia or operation provided congestive failure is not present and if found, digitalis must be prescribed.

As I have already indicated in speaking of organic heart disease, appreciation of the etiologic factor is of considerable importance and as stated statistically the coronary sclerotic cases and the luetic cases have a higher mortality rate than do the rheumatic cases during surgery.

Let me now draw your attention to two forms of heart disease, namely the coronary sclerotic and

the luetic, in an attempt to point out the reasons why these types of cases offer a greater operative risk. One must appreciate the fact that these cases usually fall in the same age groups that is over 35 years of age, that they have basically a common underlying impairment of coronary blood flow. In the case of syphilis there is usually involvement of the ostia of the coronary vessels as they leave the first part of the aorta and in the case of coronary sclerosis patchy areas with intimal thickening occur along the various coronary arteries.

These facts would tend to create an underlying impairment of myocardial nutrition. Then add to this the factor of further anoxia during the period of anaesthesia, again add the factor of anemia created by blood loss and in addition the advent of the factors creating varying degrees of surgical shock with a drop in systemic blood pressure as well as associated infections and you will, I am sure, appreciate why these cases as a whole tolerate anaesthesia and surgery poorly. If manifestations of congestive failure or of cardiac arrhythmias are also present you can well understand why these features may become aggravated or accentuated. It is not an uncommon happening in such cases to have develop shortly after the operation, signs and symptoms of a myocardial infarction.

For the various reasons which I have attempted to outline one must always consider these types of cases seriously when they are to undergo surgical operations and must make sure that they also have not had a previous myocardial infarction which is producing referred abdominal symptoms possibly suggesting an acute surgical condition of the abdomen.

How then can we offset this type of cardiovascular complication in surgery? First, I believe, we must be cognizant of the etiology of the cardiac status and fully appreciate the individual's symptoms and complaints indicating impaired coronary blood flow. We should choose the anaesthetic so that it will not be accompanied by anoxemia or create too great a drop in systemic blood pressure, and we should avoid too great blood loss and too much trauma during the surgical procedures.

Post-operatively, these patients must not receive too heavy sedation; during the operation ephedrine and pituitrin should be withheld as they only further induce impaired coronary blood flow. Anticoagulants, as has been so frequently advocated, may be employed to offset the possible development of infarction or thrombosis but in advising this one has to take into account the possibility of hemorrhage developing at the operation site. Complete and careful evaluation of the prothrombin times before and during anticoagulant therapy is imperative.

In concluding then this presentation of the preoperative appraisal of the cardiovascular system there are several points which I think are well worth emphasizing. (1) Whether the cardiovascular system presents any evidence of organic heart disease. (2) Etiology of same. (3) The presence of past or present manifestations of congestive failure. (4) Evidence of active carditis or recent or impending coronary occlusion. (5) Evidence of active endocarditis. (6) If an arrhythmia is present its character as well as an appreciation of its effect upon the efficiency of the circulation.

The finding of organic valvular disease if without evidences of congestive failure is no contraindication. Congestive failure and arrhythmias demand proper care and appraisal before operation, as well as appropriate therapy post-operatively. Evidence of active rheumatic or other carditis should warrant postponement of all non-urgent operations but if urgent then a choice of anaesthesia which will not further impair the heart will be warranted.

In the case of coronary sclerotic patients with insufficiency and/or myocardial infarction all non-emergent operations should be postponed until the area of infarction has become well healed or revascularized. After healing has occurred then operation may be advised provided care is taken to avoid great fluctuations or drops of systemic blood pressure. If an emergent operation is indicated at the time of an acute coronary occlusion or myocardial infarction then expeditious surgery will have to be undertaken and with these I believe one should advise local or intravenously administered sodium pentothal narcosis.

Obstetrics

The Physiology of Reproduction The Endocrine Glands and Their Secretions

From the Faculty of Post-Graduate Studies of the Winnipeg General Hospital in the Department of Obstetrics and Gynaecology.

Section "A" No. 4

The Thyroid

Harley Hughes, M.D.

The Physiology of the Thyroid Gland With Particular Reference to its Importance in Obstetrics and Gynaecology

History

1874—Sir William Gull connected atrophy of the thyroid with loss of hair, thickening and dryness of the skin and great loss of mental and physical vigor.

1878—Ord named above myxedema because he thought the thickening of the subcutaneous tissue was due to mucin formation.

1882—Reverdin Brothers; 1883—Kocher: Cured goitre by total thyroidectomy and produced myxedema.

1891—Gley discovered that the parathyroid glands were being removed at thyroidectomy and thus the action of the two could now be separated.

1891—Murray showed curative effects of injections of glycerin extract of fresh sheep thyroid in a case of myxedema.

1892—Howitz, Mackenzie, Fox: Confirmed the work of Murray and showed thyroid to be equally efficacious by mouth.

1894—Emminghans and Reinhold showed thyroid feedings produced a marked reduction in size of certain types of goitre.

1895—Magnus-Levy, using a colorimeter, discovered that heat production was lowered as much as 40% in myxedema.

1895—Barmann showed iodine in a firm organic combination was a normal constituent of the mammalian thyroid.

1899—Oswald observed that iodine was contained in the colloid and the colloid was a globulin; he introduced the terms thyroglobulin and iodo-thyroglobulin.

1916—Kendall isolated a crystalline compound containing 65% iodine which produced the same effects as desiccated thyroid.

1926—Harington determined the empiric and structural formula of thyroxine and established the mother substance of thyroxine as 1-tyrosine.

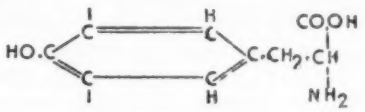
1927—Harington and Borger synthesized thyroxine which appears to be only the active chemical group of the true hormone which is probably iodothyroglobulin. They also showed that the inactive iodine is in the form of di-iodotyrosine and estimated that normal thyroid was 40% thyroxine and 60% di-iodotyrosine.

Biochemistry

The thyroid gland specifically stores the element iodine in the form of a complex protein, iodothyroglobulin. The iodine is contained in the colloid which is a globulin and is called thyroglobulin.

From iodo-thyroglobulin the thyroid hormone is set free; the nature of this hormone has not been completely elucidated, but it is possibly a tri-or tetra-peptide containing radicals of di-iodotyrosine and thyroxine.

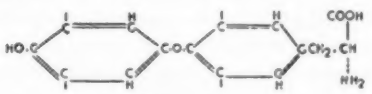
Di-iodotyrosine contains 58.66% of iodine, 3.24% of nitrogen and its chemical structure is closely related to that of thyroxine. The structural formula is 3.5—duodo—1—tyrosine and the empirical formula is $C_9H_9NO_{312}$. Pure crystalline di-iodotyrosine is inactive physiologically in practical therapeutic doses. Di-iodotyrosine is physiologically active only as a component of the thyroglobulin molecule.



Di-iodotyrosine

Thyroxin, when first isolated, was accepted by many as the true thyroid hormone. Qualitatively it exhibits all the physiological properties of the thyroid hormone, but there is still disagreement as to whether it possesses the quantitative activity of that hormone. Present knowledge indicates that thyroxin is a physiologically active cleavage—product of the natural thyroid hormone.

Thyroxine contains 65.38% of iodine and 1.80% of nitrogen. Its empirical formula is $C_{15}H_{11}O_4NI_4$. It is the tetra iodo-parahydroxyphenyl ether of tyrosine.



Thyroxine

II. Natural Thyroid Hormone

So far as is known the thyroid is the only gland capable of producing an iodine-containing hormone. No other substance can take the place of this hormone in a body derived of its thyroid.

The natural thyroid hormone constitutes either the characteristic iodine-carrying colloid produced in the thyroid, or a portion of the molecule of the colloid.

As present in the fresh or dried gland, the natural thyroid hormone is absorbed in a quantitative manner from the gastrointestinal tract. Properly prepared and carefully assayed thyroid is the most perfect and less expensive replacement therapy known.

III. Physiological Functions of the Thyroid

A. T. Cameron summarizes the normal function of the thyroid gland as follows—"While the evidence is perhaps still too indirect to be final, and while we cannot yet trace an intermediate association with oxidation for all the known effects produced by the thyroid there seems to be little doubt as to the general truth of Plummer's view that the thyroid principle exerts an influence on the oxidation proceeding in all the cells of the body and thus produces its actions. Whether such action is catalytic, as Plummer suggests, is not certain. It has been suggested that the essential action lies in facilitation of oxidation in the anaerobic stage and in support of this, it has been found that injection of thyroxine increases the lactic acid concentration in blood. The peculiar fixed limit of the effect on normal oxidation—40% under thyroid control—suggests control of specific reactions rather than an uncontrolled catalysis."

The effects of thyroidectomy (and thyroid hormone overdosage) may be listed as follows:

1. Decreased resistance to various types of non-specific damaging agents occurs with both thyroidectomy and hormone overdosage.

2. Body temperature is diminished (slight increase with hormone overdosage).

3. B.M.R. drops to —40% (hormone overdosage may cause use to plus 100%).

4. Increased glucose tolerance in carbohydrate metabolism (Hormone overdosage diminishes glucose tolerance and causes an elementary glycosuria).

5. Causes a rise in the total lipid content in the blood, especially cholosterol. (Hormone overdosage tends to depress the blood cholosterol).

6. Decreases the urinary elimination of nitrogen (Hormone overdosage causes an increase). The thyroid likely causes an increased destruction of exogenous and endogenous proteins.

7. Decreases blood iodine (Hormone overdosage causes an increase).

8. Calcium and phosphorus elimination are decreased (Hormone overdosage causes a pronounced increase in fecal calcium).

9. Causes a definite tendency toward the accumulation of water in the intercellular spaces (in certain disturbances of water metabolism which are conducive to edema thyroid administration may cause a diuresis).

10. In growing individuals the blood phosphatase concentration is decreased (thyroid administration returns it to normal).

11. Occasionally causes some degree of anemia (Hormone overdosage may produce reticulocytosis).

12. In immature growing animals may retard the development of the skeleton, but has little effect on the adult.

13. Decreases cardiac size and pulse (thyroid administration produces cardiac hypertrophy and tachycardia accompanied by an increase in the systolic blood pressure and by peripheral vasodilation).

14. The Lymphatic organs notably the lymph nodes, thymus, spleen and bone marrow usually show moderate involution (small doses only of thyroid hormone cause growth of lymphatic organs).

15. Usually decreases muscular strength without morphological changes in the muscle.

16. The effect of the thyroid upon the vegetative nervous system is not clear cut, but it appears that the hormone stimulates the excitatory nerves of the various organs whether supplied by the vagus or sympathetic system.

17. Decreases both secretory and motor activity of the gastro-intestinal tract (administration of thyroid has opposite effect).

18. Tends to cause peripheral vasoconstriction which makes the skin cold, usually there also is some hyperkeratosis and deficiency of hair growth.

19. Diminishes the size of the kidney (Hormone overdosage increases it).

20. Causes involution of the accessory sex organs both in the male and female (Hormone overdosage causes the same effect). This is probably mediated through the gonads.

21. The female sexual cycles become irregular or give way to amenorrhoea, following thyroidectomy or severe thyroid hormone overdosage. Here again the effect is presumably mediated through the gonads. Curiously and rather inexplicably, thyroid hormone is often beneficial in the therapy of diverse disturbances of menstruation and even in female sterility.

22. Both thyroidectomy and thyroid hormone overdosage tend to diminish the milk production of lactating animals.

IV. Interrelationships Between the Thyroid and the Other Endocrine Glands

Anterior Pituitary—Thyroid Relationship

Injections of extracts from the anterior lobe of the pituitary cause a rapid loss of the iodine store in the gland; there is an increase in blood iodine, an increase in the B.M.R., an increase in the excretion of calcium and creatine and exophthalmus develops. On the other hand hypophysectomy results in a decreased function of the thyroid gland while after thyroidectomy the anterior lobe of the pituitary hypertrophies greatly. All these findings point to the existence of a thyroid-stimulating

hormone elaborated by the anterior lobe of the pituitary. Loeser, Anderson, Collip and others have separated the specific thyroid stimulating factor from the anterior pituitary and since then sufficient work has been done to conclude that the thyroid may be directly stimulated only by this anterior pituitary substance.

Thyroid-Gonadal Relationship

In cretinism and myxedema, sexual development and function are markedly subnormal and libido is impaired. In hypothyroid women menstrual disturbances such as amenorrhoea, hypomenorrhea or even dysmenorrhea are present frequently. When the hypometabolic state is corrected by thyroid administration the menstrual disorders may clear up also. Enlargement of the thyroid is observed frequently at puberty, at the menstrual periods and during pregnancy after castration there may be a gradual lowering of the basal metabolism with a slow involution of the thyroid gland in rabbits and mice. Da Costa and Carlson found that desiccated thyroid in large doses retarded sexual maturation of white rats while small doses accelerated it.

Such observations as those listed above indicate that gonadal function is influenced in some way by the thyroid and vice versa. Whether or not this is a direct influence is still a subject for investigation by endocrinologists and physiologists. The inclination today seems to be toward the belief that there is a three-cornered relationship between the thyroid, the pituitary and the gonads. In other words, it is thought that many thyroid-gonad effects are mediated indirectly through the pituitary.

Thyroid-Thymus Relationship

Experiments indicate that there is some kind of antagonism between the thyroid and the thymus.

Thyroid-Pancreas Relationship

Experiments with insulin and the hyperglycoemic action of epinephrine show that the thyroid and pancreas are antagonistic.

Thyroid-Liver Relationship

The glycogen storage is greatly reduced by prolonged administration of thyroid illustrating the effect of the thyroid on carbohydrate metabolism.

Thyroid-Chromaffin System Relationship

Experiments with epinephrine and thyroxine indicate a direct stimulation of the chromaffin system by thyroxine.

Thyroid-Adrenal Cortex Relationship

It is thought that the adrenal cortex (and sex glands) acting through the anterior pituitary, normally exercise some regulatory or inhibitory control over thyroid function; when this control is sufficiently depressed or withdrawn, the activity of the thyroid is temporarily increased. Estrogenic substance present in adrenal cortex and sex glands may be the functioning substance.

V. B.M.R. and Its Variations in Menstruation and Pregnancy

The term "basal metabolism" means the minimal heat production of an individual in a fasting condition, at complete muscular rest and under standard conditions of temperature. Basal metabolic rates are expressed in percentage of the normal. When the heat production is greater than normal it is plus; when less than normal, it is minus. The average normal metabolic rate is consequently O. According to Jackson a rate between minus 10% and plus 10% may be considered within normal limits for clinical purposes.

The thyroid contributes about 40% of the total metabolic activity of the body. The remaining 60% of the oxidative processes proceed without the stimulating effect of the thyroid hormone. Thus, it should be borne in mind that factors other than the thyroid influence basal metabolism. Other conditions which raise the B.M.R. are leukemia, hyperpituitarism and hyperadrenalism, menstruation and pregnancy, early diabetes cardiac decompensation, pernicious anemia, nephritis without edema and fever.

Lowered metabolic rates (—15 to —40) invariably occur in myxedema and cretinism. Adrenal cortex deficiencies, such as Addison's disease cause a marked reduction. Certain forms of hypopituitarism such as Frohlich's syndrome are apt to produce a moderate reduction in metabolic rate.

B.M.R. in Menstruation

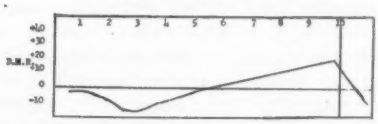
The B.M.R. is high pre-menstrually and lower during and after menstruation. There is evidence for a second peak and valley in the curve, but the exact time in the period is unpredictable.

Example of a B.M.R. Curve during the cycle of a menstruating woman.

One author has suggested that because of the unpredictable peak it might be wise to take a woman's B.M.R. during their menstrual periods when it is at its lowest point in all patients.

B.M.R. in Pregnancy

There is an increased B.M.R. in normal pregnancy. Below is a graph for the B.M.R. in an average normal pregnancy:



The increase in the B.M.R. during gestation has been attributed by Sandford and Wheeler, Hanna,

and others to the active protoplasmic mass of the foetus. Hanna adds that thyroid hyperplasia associated with pregnancy may also be a factor which is tenable since visible hypertrophy of the gland occurs in 41% of pregnant women according to Davis and palpable enlargement up to 90% according to Hilton. The current opinion is that the normal rise in the B.M.R. during pregnancy is due to thyroid hyperplasia concomitant with pregnancy. This theory seems the more likely, but neither view has conclusive evidence.

VI. Experimental Studies of the Thyroid During Pregnancy

Peters and Man have shown that the precipitable iodine of the serum (protein bound iodine) uses sharply at the onset of pregnancy from the normal concentration of 4 to 8Y% to concentrations between 6 to 10Y% and remains at these levels until delivery after which it rapidly returns to the normal range. This use is not accompanied by other manifestations of increased activity of the thyroid gland. There is reason to identify the increment of iodine with the thyroid hormone.

There is evidence to suggest that failure of the precipitable iodine to use at the onset of pregnancy leads to early miscarriages which may be prevented by the administration of active thyroid substance. Low precipitable iodine in these cases is not accompanied by other manifestations of thyroid deficiency.

It might be of interest to note that the serum precipitable iodine in pregnancy does not appear to be consistently related to the concentration of iodine preceding pregnancy.

No evidence has been found in a limited number of observations that serum precipitable iodine is abnormal in women with infertility or suffering from toxemias of pregnancy.

J. P. Cher, working with rabbits, noted that in the absence of the thyroid gland hypertrophy of the follicular apparatus resulted from the increased production of follicle-stimulating hormone, but that the life span of the corpus luteum did not seem to be shortened although the pituitary luteinizing hormone was diminished.

From further experiments with thyroidectomized rabbits he concluded that the importance of the thyroid hormone lies in its ability to maintain the vitality and growth of the embryo during gestation.

VII. Clinical Studies of the Use of Thyroid Medication in Obstetrics and Gynecology

1. Amenorrhea—Haines and Mussey found that in 50 patients, 27 of whom were married; average age 26.9, and average duration of amenorrhea 9½ months and average B.M.R. being —18.1% (—11 to —30%) that 58% were cured, 14% showed improvement and 28% were not improved with thyroid medication.

2. Oligomenorrhea—Haines and Mussey found that in 9 patients; 6 whom were married, average age 30.6; average B.M.R. —19.8% that 33% were cured, 22% showed improvement and 44% were not improved with thyroid medication.

3. Menorrhagia—Haines and Mussey found that in 15 patients, 12 of whom were married; average age 30; average B.M.R. —20% that 53.3% were cured, 20% showed improvement and 26.6% were not improved by thyroid medication.

4. Miscarriages and Habitual Abortions have been attributed by some authors to hypothyroidism. According to Means thyroid medication is an extremely valuable therapeutic measure in habitual abortion. Peters and Man, on the other hand, do not consider the evidence sufficient to support this, citing the fact that "total removal of the thyroid of the non-pregnant animal produces sterility but once pregnancy has been established thyroidectomy does not interrupt it.

5. Sterility—Myxedema is certainly a well known cause of sterility while complete absence of the thyroid causes sterility in both sexes. According to Means thyroid medication is an extremely valuable therapeutic measure in defective fertility. He advocates that thyroid be administered in any case of fertility when no organic cause can be found whether the basal metabolism is subnormal or not.

Litzenberg and others feel that infertility in women with no pelvic pathology and normal menses may be due to some lesser degree of thyroid deficiency. Litzenberg claims that 50% of sterile women have a B.M.R. under —10% and that 33.5% of these become pregnant soon after the administration of thyroid. He also claims that 40% of women with low B.M.R.'s and no symptoms are sterile while another 40% have functional menstrual disturbances. He defines hypometabolism as —10% or lower.

Peters and Man, on the other hand, feel that there is no conclusive evidence to support these viewpoints.

In the above five conditions it should be pointed out that there is little or no physiological reason for the administration of thyroid; its effects being more or less empirical.

6. Hyperthyroidism

Clinical hyperthyroidism does not appear to influence the normal cause of pregnancy nor to prevent conception. There is a low incidence of hyperthyroidism in pregnancy ranging from 0.08% to 3.7% in goitre districts. The symptoms are the same as without pregnancy. The incidence of toxemia is 77% with hyperthyroidism and 33% in patients with an elevated B.M.R. There is an increased function of the thyroid gland in pregnancy

and this is especially true in eclampsia where there is an increased amount of circulating thyroxine-like substance. There may be a common factor between toxemia and thyrotoxicosis, but there is no proof as yet. Medical treatment is satisfactory in 90% of cases while surgical treatment such as thyroidectomy and therapeutic abortion is only indicated in severe Graves' disease or severe toxemias.

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Preventative Dentistry

E. Roy Bier, D.D.S.

Preventative medicine is a common conception. To apply prevention in dentistry usually means general tooth care. Here I want to consider dental measures as means of preventing the development or aggravation of diseases throughout the body, and as a means of ensuring better health and longer life.

What are the conditions in which we have to consider preventative measures?

(1) In our offices we often see patients who suffer from systemic involvement and who have painful dental conditions which must be relieved by surgery under general anaesthesia. Some of these conditions are: acute abscesses, cysts, tumors, pyorrheal disease with or without Vincent's infection, and various peridontal infections.

(2) Specially important are patients who have heart disease, either coronary disease or valvular lesions. In these cases the cardio-vascular status is discussed with the attending physician so that we may have a clear picture of the ailment.

Our first procedure is to ensure a bacteria-free blood stream. We do this by using Penicillin in the form of Procaine-Penicillin. An intra-muscular injection of 300,000 units is given the day before operation, the day of operation and the day after operation. This protects the heart from bacterial damage.

The use of penicillin is a "must." Sometimes sulphadiazine also is given in 7½ grain doses four times daily.

This general protection is aided by careful local treatment of the mouth when pyorrhea, gingivitis, trench mouth or bleeding gums are present. This treatment controls the focal infection and prevents bacteremia.

For the local care we use cotton rolls to protect the lips, cheeks, tongue, etc. Then vastine applicators of pledgets of cotton are soaked in iodine and applied, followed by 40% silver nitrate, and salt and water in a mouth wash to which hydrogen peroxide is added. That is half a teaspoonful of salt and two teaspoonfuls of peroxide in half a glass of water. The wash is used three times daily. A mouthful is held for 30 seconds by having the patient count slowly up to fifty while holding the solution in his mouth.

Why hold the mouth wash so long? Because this helps to loosen and wash away the bacteria. It takes nine minutes to kill certain anaerobic bacteria, so the wash is not expected to be bactericidal. It only helps to wash them away.

As well as doing our best to destroy bacteria in the mouth and to keep the blood sterile we check up on the condition of the blood ifself. We must know how rich it is in haemoglobin and, most important, the bleeding and clotting times. Patients with normal hearts may be given calcium but this must be avoided when heart disease is present. We don't want to get clotting in the wrong place.

When general anaesthesia is to be used we use Oxygen with the nitrous oxide. The oxygen gives the heart strength and sometimes during the anaesthetic we give a few whiffs of straight oxygen, especially at the beginning, about the middle and at the end of the operation. Nature is kind and these heart cases can remain anaesthetised under as much as 20% oxygen. Others might be wide awake under such a mixture.

One has to be exceedingly careful with the anaesthetic in such patients; Heart cases, hypertensives and other cardio-vascular patients are poor anaesthetic risks unless extreme care is used.

I want to emphasize the pre-and post-operative use of penicillin when much local infection is present. It prevents dangerous bacteremia and hastens and improves healing.

Patients With Disease of the Urinary Tract

Patients with venereal disease do not volunteer the information but will admit it usually in a private interview when no one else is present. If the patient is under treatment for V.D. the physician's opinion should be obtained. In these cases penicillin and the sulpha drugs are prescribed. About 90% of the physicians ask us to prescribe the necessary premedication for about 10% of our referred cases. The family doctor or specialist prescribes the necessary pre-and post-operative care for those under active treatment.

Patients With Diabetes

Consultation with the physician gives us a clear understanding of the patient's status. Such patients must be balanced if trouble is to be avoided.

Patients With Nephritis

Nephritic cases are more serious. Pain tends to be greater and healing tends to be delayed. Some of these patients tolerate aureomycin better than the other anti-biotics. The same rule applies to all anti-biotics—they must be given before and after dental surgery.

Patients With Arthritis

Patients who have painful or swollen joints should have x-rays to determine the depth of pyorrhea pockets, the presence of abscesses and other pathological processes. Pre-and post-operative local and systemic medication are necessary to protect the patient's general health.

The extraction of teeth, be they few or many, under local or general anaesthesia, is dangerous to the health of patients who are not properly premedicated.

Our aim is to improve the health by removal of dental foci of infection. But to do so without proper local and systemic premedication is to worsen the condition by releasing into the blood stream countless millions of bacteria. This may produce a virulent bacteremia which swamps the body's mechanisms of defense. When the general health is below par this danger is very great and much harm may be done.

Dr. "Bloodgood" says that the local application of 7% iodine and 40% silver nitrate on the day of the appointment followed by the mouth wash mentioned earlier will reduce bacteremia by 75%. So why not do it? The nurse can learn the technique and have the patient ready for extraction.

Coming back to rheumatoid arthritis. Many of the degenerative changes seen in the skeletal joints are also to be seen in the temporo-mandibular joints. Abnormal occlusion may result in inter-articular cartilage disease. Osseous changes are also seen. There are five types. Some are caused by infection—dental or otherwise—but all show bone changes.

Diseases of the joints include, G.C., luetic, tuberculous, pyogenic and rheumatic arthritis; and conditions such as gout, spondylitis, fibrositis, bursitis, etc. All of these are inseparable from dental surgery. Focal infection is inseparably connected with systemic infections and so we must consider dental care as a vital part of Canadian Health Service to humanity.

Disease of the Salivary Glands

Dentists are chiefly concerned with the abnormal output of saliva. Ptyalism (increased salivation) is due to, or increased by, nervousness and by drugs such as pilocarpine, mercury, iodines, bismuth and bromides. Tobacco and coffee have a stimulating effect. So also have local inflammations such as pyorrhea, gingivitis, Vincent's Infections; and systemic conditions such as pregnancy, hysteria and encephalitis.

Diminished secretion — xerostomia — is usually nervous in origin, but certain drugs will cause the mouth to become dry—atropine and morphine for example.

Stones in the salivary ducts lead to dryness and to swelling of the glands. Inflammations, such as mumps have the same effect. Dry mouth makes for difficulty in swallowing and in wet mouth there is danger in the copious secretion. Great care is necessary in these cases during anaesthesia in order to prevent asphyxia. Suitably placed rubber drainage tubes, hot compresses and lamp heat are necessary. So are the sulphas and anti-biotics. Patients with such conditions are best treated in hospital where other factors such as diet, laxatives and sedatives can be controlled.

Epilepsy, Convulsions

Patients who take fits may have one in the waiting room. They should be prevented from biting the tongue by placing a cork between the teeth. When the history is known preliminary barbiturate administration and also 1 c.c. of demerol before operation will keep them quiet.

Stokes-Adams Attacks mean serious heart disease. The pulse beats very slowly because of ventricular systole. Adrenalin solution 1-2000 up to 5 c.c. should be injected. When the history is known preliminary medication may avert an attack in the office.

Carotid Sinus Syncope is due to pressure by collar or neck wear upon a sensitive carotid sinus. Syncope from this cause can be avoided by leaving the neck free from pressure.

Heart Disease Again

Because cardiac cases are the most serious from the stand point of dental surgery I make reference to it again.

Fifty per cent of heart cases have pyorrhea or focal infection about the roots or both.

All heart cases require dental care because in this way disaster may be prevented.

The nature of the heart disease is suggested by the age of the patient. In children and people under 40 it is most likely to be rheumatic heart disease. In adolescents and middle aged people hypertensive heart disease becomes more common as age increases. In the forties and fifties coronary disease is common and increases with age.

Luetic heart disease is seldom recognized in people under forty.

In order to be sure that the patient will be properly safeguarded we insist on having certain data. This is the Necessary History in Heart Cases.

Necessary History in Heart Cases:

1. When did you see your physician last? Name and address of M.D. Can we phone your physician?

Patients are quite willing to answer enquiries and feel better satisfied if dentist is properly informed of case.

2. Do you have pain over the heart in Sternum or Breast Bone?

Does it pass up to arms and side of neck? If so, suspect Angina Pectoris. Surgical risks are increased with Angina Pectoris.

Cardiac decompensation of any kind, also in Coronary Thrombosis and Nephritis (kidney disease).

3. Do your ankles swell? (Oedema).

4. Have you had Rheumatic Fever? High Blood Pressure?

5. Have your ancestors or present relatives any of above symptoms?

6. Do you have shortness of breath, on climbing stairs? Do you have to pause half way up?

7. Patients consider dental examinations more complete if dentist shows any interest in patient's welfare.

8. Are you nervous? Do you faint easily? (Benign Syncope).

Fainting may occur at the sight of dental instruments—prick of a needle—overheated room —sight of blood. Fear and anemic condition of brain is cause of this fainting. Lower chair or have patient lie down on couch. Give them smelling salts. 1 teaspoonful of aromatic spirits of ammonia in ¼ cup of water. Have patient swallow same.

Diseases of the Blood

It is important to know the quantity and quality of the patient's blood. Some patients tend to bleed and this is serious in the presence of anaemia. I have had many narrow escapes in cases of prolonged bleeding due to conditions such as hemophilia even when only one or two teeth were extracted. Then one has to pack the sockets and give blood or plasma intravenously. When one knows that bleeding is likely to be prolonged, preoperative medication is used for weeks or even months ahead. Calcium by mouth and vitamine K intramuscularly are given.

Diseases of the Lungs

Unhealthy mouths and unhealthy lungs are often associated. Hence dental surgery may be a powerful preventative of serious lung disease. Removal of periapical abscesses and the treatment of pyorrhea are essential when the lungs are weak or diseased.

Preventative dentistry may assist in reducing the incidence of the "common cold." The dentist should protect himself by wearing a mask. Most important from the preventative stand point are: lung abscess, chronic bronchitis. Abscess may develop from the aspiration of pus from the mouth. Broncho-pneumonia may be caused in the same way.

Diseases of the Gastro-Intestinal Tract

Mayo estimated that at least a quarter of all gastro-intestinal diseases had its origin "above the clavicle."

Just think how important a healthy mouth is for a healthy stomach and bowel. If the teeth are bad the patient can't chew properly. If the mouth is dirty millions of germs are swallowed with every mouthful of food. If in addition the food and drink are unsuitable the stomach becomes inflamed and the bacteria of the mouth attack the lining of the stomach and bowel.

Keeping the mouth clean goes a long way to ensuring healthy digestion, proper assimilation and good health.

Pain

Most patients are forced to the dentist because of pain and most people know from experience what toothache is like.

There are, however, other pains not directly connected with the teeth—tic doloreux or trigeminal neuralgia in which the pain is wide spread and very severe. There are certain general headaches due to dental disease—headaches due to impacted teeth. And teeth may be to blame for glossalgia or painful tongue.

Let us now consider these local and generalized pains.

Pains about the face and head may be due to disease in the teeth or to disease which is only associated with dental disorders. The pain may be constant or intermittent. Heat will make it worse if there is hyperemia with dying or dead pulp, or when the pulp chamber contains gases which are expanded by heat.

When cavities are present we must find out how many and how deep these are, and that requires x-ray examination. We also look for the swollen, red gums, pyorrhea pockets, etc., which indicate periodontal disease.

Trigeminal neuralgia is not due to dental disease but often it causes toothache. It is exceedingly severe and often very difficult to treat. The cause of true tic doloreux is not clear, but there is a atypical neuralgia (has similar symptoms) which gives pain in the same places but which can be cured by removal of abscessed, putrescent or impacted teeth. Or it may be caused by decayed teeth with large pulpstones or pulpitis, or focal infections of various kinds. Tumors-cysts, osteomyelitis may also be causes. Removal of pathological areas removes the cause of neuralgia and so cures it. The cure of such misery is always a dental triumph.

Headache Associated With Impacted Teeth

An important and often neglected cause of head and face pain is impaction of the teeth. Impacted

teeth occur in 15% of the population and 33% of impacted teeth cause headaches. Frequently these headaches are diagnosed "migraine." I have about 40 histories diagnosed as migraine that cleared up after removal of impacted teeth. These are characters of headache associated with impacted teeth:

The site of pain—back of neck, temporal region, top of head.

Headaches due to sinus trouble, associated with abscessed teeth below antrums—x-rays of teeth, x-ray of sinuses.

Forehead—over eyes—top of head—under eyes —antrum.

Behind eyes—sphenoidal and ethmoidal sinuses.

All may be wrongly diagnosed as migraine.

Glossalgia—Pain in the Tongue

Stomatitis, canker sores, cold sores, sharp teeth, ill-fitting dentures.

Other Causes of Head Pain

Eye strain, alcoholism, constipation, etc. Or the pain may be of functional origin.

Psycho-neurotic Pain

The chief point about psycho-neurotic pain is that it has no organic basis. The gums, the teeth, the tissues of the jaws, mouth and face are all normal. These pains occur in high strung, nervous individuals. They may be felt in or radiated from the jaws and teeth. One has to be cautious in calling a pain psycho-neurotic. I had a patient with diabetes whose jaws ached for four months after extraction. When the diagnosis was made and she was given insulin the pain disappeared.

Headache and Face Pain Due to Allergy

Almost any food stuff can cause allergic reactions such as swelling, headache, rashes, etc. One must be sure that the cause is found. But all these non-dental causes of headache and face-pain will be helped by making a dirty mouth clean.

In the above I have brought out the relationship between mouth-health and general health. We can help the physician in several ways. First, we can remove foci of infection which undermine health. Second, we can protect his patient during the time of extraction. Perhaps we can even help to prevent the development of certain diseases. By removing impacted teeth we can remove intractable headaches which cannot otherwise be helped.

All this is prophylactic dentistry in the widest sense. It not only saves the patient's teeth, it saves his health and even his life.

Cancer

Cancer Diagnostic Service

A Report on the First Year's Operation

R. F. Friesen, M.D.

Somewhat over a year ago the Manitoba Medical Association and the Manitoba Cancer Relief and Research Institute jointly announced the institution of a Cancer Diagnostic Service intended specifically for residents of rural Manitoba in straitened financial circumstances, who are suspected by their doctors of having cancer. Essentially, this is a referral service giving general practitioners ready access to specialized consultants' services, in problem cases where cancer is suspected. By insisting that all patients be referred, the essential part which the general practitioner plays in cancer diagnosis is emphasized. When the diagnosis is established a complete report is sent to the referring doctor. To keep him informed, and to help him discuss the case with the patient's relatives, a progress report is sent upon request, or in cases where a considerable period of time is required to complete the investigation.

To avail himself of this service the doctor merely fills in the special referral form which states that he has found symptoms suggestive of malignancy in the patient who, in his opinion, cannot afford to pay for the further investigation required. After having the card countersigned by the proper municipal official, the patient takes it with him to the hospital of his choice. Booklets of referral forms have been mailed to all practising doctors in Manitoba, and more are available upon request.

There is no charge to the patient for this service. The medical services are provided without charge by all doctors participating in the work of the clinics. The cost to the hospitals of all diagnostic procedures and hospitalization is met by the Manitoba Cancer Relief and Research Institute. These privileges are available to residents of all Manitoba, exclusive of the Greater Winnipeg area. The portion of the Municipal Commissioner's levy which is used to meet the costs of this service, does not apply to the following areas, and consequently residents of these areas are not eligible:

City of Winnipeg
City of St. Boniface
Town of Tuxedo
Town of Transcona
Village of Brooklands
Rural Municipality of St. James
Rural Municipality of Fort Garry
Rural Municipality of St. Vital
Rural Municipality of East Kildonan
Rural Municipality of West Kildonan

The service is restricted to diagnosis and in no way alters previously existing arrangements for treatment. If a doctor has made a definite diagnosis of cancer in a patient, as for example, if he has had a positive biopsy report, and wishes to refer him for treatment, the referral should be made on a private basis, or to a hospital as a public ward patient rather than to the Cancer Diagnostic Service. A patient whose diagnosis is made by the Cancer Diagnostic Service has the privilege of electing to have any necessary treatment carried out by the doctor of his own choice. Most of them cannot afford this, and are treated on a public ward basis.

During the first three-month interval 15 patients were seen; during the second, 18; during the third, 20; and in the final quarter, 27, making a total for the year of 80. Of these, 62 were investigated at the Cancer Diagnostic unit at the Winnipeg General Hospital, and the remaining 18 at the unit at the St. Boniface Hospital.

Table 1

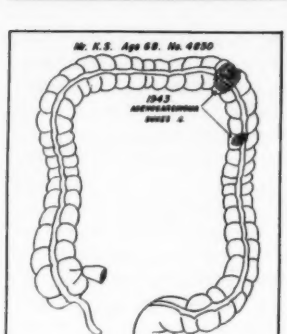
Site of Malignant and Non-malignant conditions found in 78 patients:

	Malignant	Benign
Breast	8	7
Skin	6	4
Uterus (Incl. cervix)	6	2
Lip	6	1
Stomach	3	7
Buccal Cavity	3	1
Rectum	3	----
Lymph Nodes	2	1
Pancreas	2	----
Colon	1	2
Kidney	1	1
Testicle	1	1
Thyroid	1	----
Epiglottis	1	----
Primary Unknown	1	----
Pharynx	----	1
Brain	----	1
Hemorrhoids	----	1
Cystocele	----	1
Polycythemia vera	----	1
Progressive Muscular Atrophy	----	1
Total	45	33

Table 1 lists the diagnoses established during the first year, and indicates the type of cases being referred. Of the 80 cases investigated, 45 (or 56%) were found to have cancer; in 33 (or 41%), non-malignant conditions were found; and in 2 cases no definite diagnosis was made. When the service was initiated the fear was entertained that some doctors would interpret the meaning of "symptoms suggestive of malignancy" too broadly, and refer too many problem cases in whom cancer was a remote possibility. That this has not happened during the first year is at once apparent from the proportion of malignant and non-malignant conditions diagnosed. These figures rather suggest the opposite—that patients are not being referred until there is too strong a suggestion of cancer. In the interests of more successful treatment it would seem to be advisable to refer patients before the signs and symptoms so obviously suggest malignancy.

Fifty-one doctors utilized the service during the first twelve months. A study of the addresses of these doctors and of the patients they referred, shows that the majority of these patients came from the more isolated or sparsely populated parts of the province. Because, in general, these are the areas where medical facilities are least fully developed, this suggests that the service is being used as was intended—to supplement rather than to replace the facilities the doctor has available locally. If it is possible to do so, it is obviously more efficient and more convenient for the patient to have the entire investigation carried out without leaving his home community.

The Cancer Diagnostic Service is a co-operative venture on the part of numerous parties interested in the problem of the early diagnosis of cancer. In a venture on as wide a scale as this, it is inevitable that problems should arise. As the agency entrusted with the responsibility of administering the project, the Manitoba Cancer Relief and Research Institute is desirous of learning of these problems with a view to their solution. Geographic proximity makes discussion with hospital authorities and the doctors who staff the units relatively simple. The other group most intimately concerned, namely the referring doctors, is scattered throughout the province. Suggestions from this group as to how the service might be made to serve them more effectively should be sent to the Manitoba Cancer Relief and Research Institute.



The Incidence of Multiple Malignant Growths of the Large Bowel

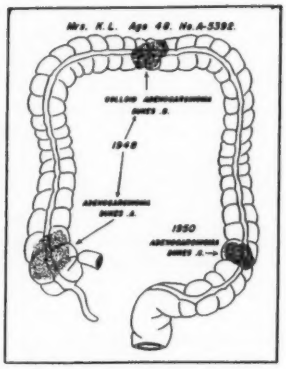
P. H. T. Thorlakson, M.D.

Multiple malignant tumors may be encountered anywhere in the large bowel. The incidence of multiplicity increasing to reach its maximum in the sigmoid and rectum.

It is widely held that the reason for the simultaneous or successive development of malignant lesions is the occurrence in the colon and rectum of benign adenomata in some proportion of the population.

Young[1] has recently reported on the findings in 500 asymptomatic patients subjected to routine sigmoidoscopy. In 8.8% adenomatous polyps were found to exist.

In order to determine the incidence of adenomas within the population, Helwig[2] of St. Louis, examined the colon in 1,460 consecutive autopsies. Adenomas were found in approximately 10%. He noted that after the age of 30, there was a constant progressive increase in each sex to reach the greatest incidence in the eighth decade. Multiple adenomas were present in about 40% of the cases affected. The sigmoid flexure was the most frequent site of adenoma formation and the most common locality for adenomas undergoing malignant transformation. Of the 139 persons in whom adenomas were found, 10 possessed one or more adenomas with cancerous change present. Helwig concludes his paper by stating that if his group of cases is representative of the evolution of carcinoma of the large intestine in general, then the majority of carcinoma of the colon develop in benign adenomas. This is in agreement with Gordon-Watson[3] who states that there is abundant clinical and pathological evidence to support the tendency to transition from innocent to malignant lesions. He said it was open to doubt if an epithelial tumor of the bowel is ever malignant in the very earliest stage.



A review of 282 consecutive cases of carcinoma of the colon and rectum observed over a 10-year period at the Winnipeg Clinic reveals the following statistical information:

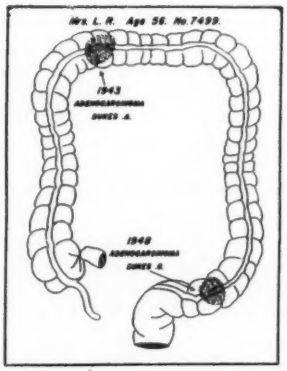
(a) Carcinoma associated with innocent adenomatous polypi 61 cases or 22%
(b) Multiple carcinoma ..... 18 cases or 6.34%

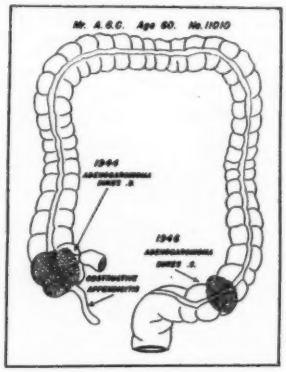
During the same period 71 cases of single or multiple innocent colonic and rectal polypi were observed.

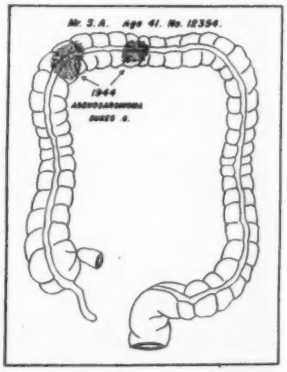
The illustrations herewith are representative cases belonging to this series.

From a review of the literature and on the basis of this study, the following conclusions appear to be justified:

1. Multiple primary carcinoma of the colon and rectum are relatively uncommon, nevertheless the incidence is such







as to influence the investigation and surgical treatment employed in any individual case of suspected malignancy.

2. Routine exploration should include inspection and palpation of the entire colon to exclude multiple lesions before proceeding with the radical removal of a carcinoma of the colon or rectum.

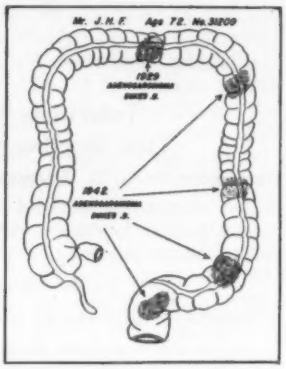
3. The discovery of one or more simple polyps in the vicinity of a malignant lesion during the process of establishing an anastomosis is one point in favor of the open over the closed method of resection.

4. Where one or more benign adenomas are found associated with a malignant ulcer, a more generous segment of bowel should be resected to eliminate a potentially malignant area of mucosa.

5. The onset of obstructive symptoms occurring in a patient who previously has undergone a resection for carcinoma of the bowel should raise the suspicion of a new primary carcinoma rather than the assumption that obstruction is due to local extension of the original lesion.

6. Patients who have undergone removal of a malignant lesion of the bowel should return for a follow-up with sigmoidoscopy and a barium enema at regular intervals.

7. Recognition and awareness of the fact that carcinomata evolve frequently from pre-existing adenomata and papillomata will go far in reducing the morbidity and mortality from malignant disease of the colon and rectum.



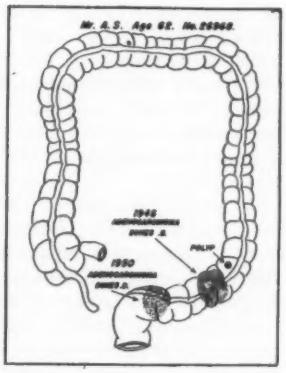
The review of 282 consecutive cases of rectal and colonic carcinoma investigated over a ten-year period serves to re-emphasize certain significant facts:

(a) Multiple primary carcinomas occurred simultaneously or at widely varying intervals of time in 18 cases or 6.34%.

(b) A history of carcinoma or adenoma occurring in several members of the same family suggested a strong hereditary tissue pre-disposition in certain individuals.

(c) The association of benign adenoma and carcinoma occurred in 61 cases or 22% of the series, giving support to the view that epithelial hyperplasia-benign-carcinoma is a common sequence.

(d) Cases of single and multiple adenomas were encountered in which microscopic evidence of both innocency and malignancy has been present not only in distinct and separate lesions but also in the same tumor.



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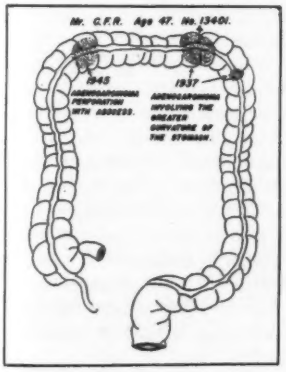

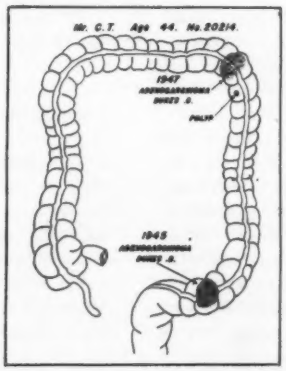

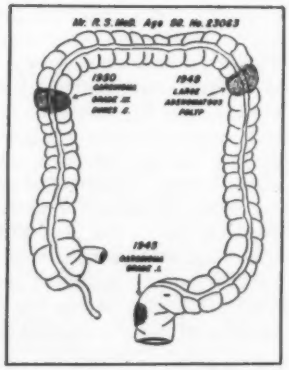

Winnipeg Medical Society

Reported by Eric R. Gubbay, M.D.

Internists Section

First Meeting 1951 - 1952

Chairman: Dr. J. D. Adamson

Dr. Adamson expressed his thanks to members for election to the Chair. An account of the papers read is given below.

Dr. A. Thompson

Diurnal Variations in Electrolyte Excretion

It is known that rhythmic daily variations occur in spontaneous activities of the living organism, for example in sleep rhythms, in heart rate, in body temperature, and in urine output. It has long been known that less urine is excreted during the night than during the day, and that associated with the nocturnal oliguria there occurs a diminished excretion of salt. Disturbance of this pattern occurs in a variety of diseases, including Addison's disease, cardiac failure, renal failure, and cirrhosis of the liver. These disturbances of the normal rhythms are as yet largely unexplained. Further, although the biological rhythms of sleep and urinary excretion are known to be linked, little is known of the renal or other mechanisms involved in the physiology of the normal.

Urine is formed by the passive process of glomerular filtration followed by the active addition or subtraction of substances to or from this filtrate by the renal tubules. According to Homer Smith, of about 180 litres of filtrate passed through the glomerular bed in twenty-four hours, only about 1.2 litres is excreted. 99.4% of the water is reabsorbed. Of the amounts of sodium and chloride passing the filter, similar high percentages are reabsorbed and only some 7% of the potassium filtered is excreted. It follows that small changes in reabsorption could cause loss of large quantities of electrolyte. Thus if 98.4% of sodium (instead of the normal 99.4%) is reabsorbed, about double the normal loss of sodium would occur and serious depletion would result in the short period of three days. (Slide One was then put on the screen). This slide shows clearly the very considerable fall in excretion of sodium, potassium, chloride and bicarbonate that occur during sleep. The magnitude of the changes in electrolyte excretion in this cycle is far greater than has hitherto been appreciated. The peak levels of the rates of waking excretion of sodium and chloride are frequently five to six times the average nocturnal rates. Excretion of bicarbonate follows the same general pattern but the changes are much more striking. This slide also shows the fall in creatinine and inulin excretion during sleep. These latter changes, whilst demonstrable, are never of the order of the changes seen in electrolyte excretion. They seldom fall more than 5% of the waking values and never more than 10%. As inulin and creatinine excretions are a measure of the rates of glomerular filtration, it seems unlikely that this mechanism, either alone or in large part, accounts for the great rhythmic changes in electrolyte excretion which have already been demonstrated.

(Slide Two). This slide shows that variations in the rhythm are not necessarily due to sleep. The peak values of chloride excretion (and of urine excreted) occur about mid-day and there is then a progressive fall towards the late afternoon and evening which in turn is followed by a further fall with the onset of sleep. Moreover it has been possible to demonstrate the rhythmic fall during the night hours in a subject actively engaged in laboratory work throughout the hours of the night. The customary morning rise in excretion followed the next morning, although the subject was at that time soundly asleep.

This basic pattern of increasing matutinal excretion of electrolytes followed by a progressive afternoon fall in excretion leading to a further fall during the night, having been established, various attempts were then made to interfere with it.

1. Using a one litre load of water as a physiological stimulus, it was not possible to disrupt the normal pattern of electrolyte excretion. Such a load of water, when given in the morning, did not alter the increasing electrolyte excretion to be expected at that time, nor was it able to halt the expected fall in electrolyte excretion when given in the afternoon. Slide Three also shows that the peak rate of water excretion after a one litre load is greater in the morning than in the afternoon. Instead of the water load interfering with the established rhythm of electrolyte excretion, the latter was able to influence the peak rate of water excretion.

2. Prolonged fluid deprivation for as long as three days has been unable to disrupt the pattern.

3. As both water diuresis and water deprivation failed to interfere significantly with the established rhythm, it was to be expected that the effect of pituitary antidiuretic hormone (whose secretion is controlled by hypothalamic osmoreceptors) would be negligible. This also has been demonstrated.

4. Salt deprivation of the magnitude that results from a nine-day period of a strict Kempner rice diet was also without effect on the rhythm. It is true that the total excretion of sodium and chloride falls to very low levels on these diets and the main electrolyte excretion is that of potassium

and bicarbonate. Nevertheless under these circumstances the very low levels of excretion of sodium and chloride during the day are followed by demonstrably lower levels during sleep. Excretion of potassium and bicarbonate follow the expected pattern both in the amounts excreted and in the rhythmic variations that occur.

5. Repeated doses of Desoxycorticosterone acetate were unable to alter the effects of the spontaneous rhythm although sodium retention was demonstrable on the background of the dominant cycle.

6. A single experiment with ACTH showed that it did not have parallel effects on sodium and potassium excretion as would be expected if it were able to interrupt the diurnal cycle.

Finally attempts were made to reproduce the cycle experimentally. It was possible to show that the induction of alkalosis either by giving sodium bicarbonate or by voluntary hyperventilation caused an immediate increase in excretion of sodium, potassium, bicarbonate and chloride. Irrespective of the time of day during which alkalosis was induced, it was possible to completely disrupt the normal rhythm by this artificial stimulus.

This paper stimulated a good deal of interesting discussion. Dr. J. D. Adamson pointed out that this paper cast a shadow on our previous reliance on water excretion tests, for in reaching conclusions we had neglected the demonstrable dominant daily rhythms. Dr. Jessie McGeachy asked, "Do the renal tubules act like the sinus node generating a spontaneous rhythm, or are they under the control of rhythms originating in the central nervous system?" She reminded members of the demonstrable changes in the electroencephalogram which occur during alkalosis.

Dr. S. Israels stated that workers in the Mayo Clinic and elsewhere had demonstrated changes in acid-base balance following leucotomy and cerebral vascular accidents, and that this might bear relation to the suggestions put forward.

Dr. A. B. Houston

Auricular Fibrillation and Plasma Quinidine Levels

(The introductory remarks sketched the historical background of the subject. The therapeutic necessity of obtaining adequate blood levels having been repeatedly stressed, it was decided to undertake the following study).

The Effect of a Single Dose on the Plasma Level

Slide Two shows that the maximum plasma quinidine level occurs about two to four hours after the administration of a single oral dose. The level has dropped to about 50% of its peak at eight hours and very little quinidine is demonstrated at twelve hours after the dose. It shows also that there is marked difference between the peak levels after the same oral dose in different persons. Therefore it was decided to study intra-individual variability, and accordingly six subjects were given the same dose of quinidine sulphate on two different occasions. Slide Four shows that no individual showed entirely consistent responses, but the differences that occurred were less than those from person to person.

As the intra-individual response is less variable the relationship of dose to plasma level was then studied by giving each of four individuals single oral doses of 2 to 15 mgm/kgm on separate occasions. Slide Four (a) shows that a higher plasma level follows a higher dose but there is no strict correlation to be established.

In order to attempt to explain the variability in plasma levels the urinary and stool excretion was studied. In twenty-six observations the percentage of the dose excreted in the urine varied from 1 to 30% but was less than 10% instances. The amount excreted was not related to either the urine volume, the dose or the plasma level obtained. The 24-hour stool was obtained by giving indigo carmine as an indicator. Analyses made on five subjects after a fasting oral dose of 1 gm. showed that from 1 to 3% of the given dose was passed on in the stool. These results provide no explanation for the variation in plasma levels which may, however, be still due to differences in rates of absorption, a point which could not be studied in the methods described above.

The Effect of Repeated Doses on the Plasma Level

Slide Five gives details of the ten cases studied as to age and sex, diagnosis and result of treatment. These were all cases of auricular fibrillation. They were given quinidine according to the custom of the various attending physicians.

Slide Six shows the plasma quinidine levels obtained from the differing dosage schedules used by individual physicians in the previous slide.

(a) Doses spaced at twenty-four hour intervals produced no cumulative effect on the plasma level. This could have been expected from our previous observations that very little effect of a single oral dose is demonstrable in the plasma after twelve hours. Further it is to be noted that doses of 1 gm. given in this way produced peak levels between 2.5 and 3.5 mgm./1.

(b) Doses of 1 gm. spaced at eight-hour levels in two trials produced an irregular sustained level between 4 and 5 mgm./1.

(c) With doses spaced at four hours or less the blood level showed no tendency to fall. Where doses of 0.2 to 0.4 gm. were given every three to four hours, a plateau was reached (after an initial smooth climb) at twelve to twenty-four hours, the level of this plateau varying between 3 to 5 mgm. %.

(d) Doses of 0.6 to 0.8 gm. every three hours used in one case tended to produce increasingly

high values up to 11 mgms. % when treatment was discontinued without effect.

Relationship of Plasma Quinidine Level to Therapeutic Effect

The results consist of twelve trials on ten patients. Normal rhythm ensued in five instances. In one of these resumption of normal rhythm may have been spontaneous. In the remaining four cases normal rhythm did not occur until plasma quinidine concentration was 3.0 mgm./1 or greater.

This important paper was then open to discussion. Dr. R. Beamish reported that he had been able to convert auricular fibrillation to normal rhythm by using a combination of quinidine and pronestyl (procaine amide) which had first been advocated for disorders of rhythm originating in the ventricles. The importance of this observation — which had also been made independently elsewhere—is obvious, for the conversion by this combined method may carry less danger of toxic effects than when quinidine alone had to be built up to very high levels. Dr. F. Mathewson agreed that all recent cases of auricular fibrillation should be treated with the aim of conversion to normal rhythm. He remarked that occasionally the unexpected occurrence of fibrillation might indicate the presence of a latent myocardial infarction.

Many speakers made reference to the work of Sokolov in this field. The original paper should be carefully studied by any practitioner who prescribes quinidine. For the convenience of readers the writer, reporting the above paper and the discussion that followed, is summarizing a few relevant points from Sokolov's paper.

1. The effect of a single oral dose—the peak effect is reached in two to three hours. The effect wears off as described above.

2. A plateau effect (similar to that described by Houston) is reported by Sokolov after five oral doses at two-hour time intervals. After this, wastage and replacement balance one another.

3. Indications for the use of quinidine in cases of auricular fibrillation. As the writer sees it there was a substantial measure of agreement in the recommendations brought forward.

(a) In the absence of heart disease—conversion should be attempted in all cases. In thyrotoxic cases many will prefer to defer the attempt, until the thyrotoxicosis has been controlled.

(b) In the presence of heart disease, if there is little evidence of enlargement and little evidence of failure, Houston recommends attempted conversion preferably in early cases. Skolov recommends attempted conversion if these patients are suffering with symptoms (palpitations and dyspnoea) not controlled by digitalis.

(c) In the presence of heart disease with considerable enlargement and chronic failure, conversion is only to be attempted if the crippling effects of the disease are not controlled by the standard regimes for heart failure.

(d) Multiple embolism is now regarded as an indication for attempted conversion! This startling reversal of indication and contraindication is ably discussed in Sokolov's paper.

The Dangers of Quinidine

4. Stress is to be laid on the E.K.G. evidence of bundle branch delay, bundle branch block, and ventricular extrasystoles. The classical clinical features of poisoning are to be watched for. Sokolov believes that at blood levels below 6 mgm. %, dosage can be increased with confidence in the absence of other evidence of toxic effects. Where blood levels of 9 mgm. % have been achieved, great caution is to be exercised in increasing dosage, even in the absence of other evidence of toxicity.

Dosage Schedule

5. Houston recommends 0.4 mgm. four hourly the first day and an increase of 0.2 mgm. per dose per day if conversion is not obtained. **Constant clinical and E.K.G. control is essential.** Latent bundle branch block as a herald of disaster may remain undetected unless it is looked for. Some clinicians aim at the ideal of obtaining cardiographic control before allowing any single next dose of quinidine to be given. (Various dosage schedules are recommended by Sokolov—the original paper should be consulted).

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Medico-Historical

Submitted by Dr. E. S. Moorhead

Dublin Doctors

"Sir, I'd have you know that Ireland had culture, arts, literature and science when England was but an ovum in the ovaries of time." So ended a heated discussion between two doctors. There was some basis for the statement; remains of the only bronze smelting furnace so far discovered in the British Isles were found near Dundalk; the date was estimated by archaeologists at 1800 B.C. Irish gold ornaments have been found in the graves in Norwegian burial places 1,000 years old. St. Columba founded a monastery at Kells in the sixth century, and it was here that the Book of Kells, said to be the most beautiful in the world, was transcribed in the eighth century.

It was not until the early part of the 19th century that Dublin doctors through their researches acquired a reputation that brought students from all over the world; in 1800 there were sixty medical students in Dublin, in 1836 over one thousand. The men mainly responsible for such a growth were Sir Dominic Corrigan, Colles, Graves, William Stokes, his son Sir William, and Barnes. Your familiarity with their names shows how outstanding was their work. However, I am not going to write at present of the diseases to which their names are attached; it was not that which brought students from Europe and elsewhere; they revolutionized teaching at the bedside and in the wards.

You must understand that at that time there were numerous private schools of anatomy, and fees were paid to the instructors. Fees were also paid to members of the hospital staffs, for instruction on diseases. Walking the hospitals was a statement of fact and not a poetical fantasy. Leading doctors following the example of Hunter had their museums and it was said that these had to be guarded carefully; a confrere calling on you would bring a large umbrella, called a gamp, and in an unguarded moment he might drop into the folds of it one of his host's specimens with which he could prove or disprove a subject under discussion. Lectures were given in a corrupt form of Latin. Robert Graves is credited with introducing English about 1830.

Colles' name is more frequently associated nowadays with a fracture, but his distinction and fame rest mainly on his work on syphilis. The hospital where I worked was in a poor area of the city and near the north Dublin workhouse and stories about Colles still existed. Labourers, patients of his who were crippled following a fracture, frequently ended up in a workhouse (a refuge for impoverished and crippled people). Colles visited them bringing presents of tobacco, etc.; he was also on friendly terms with the staff. Some night a messenger would arrive telling him that so-and-so had died. Colles would drive over, do a hurried amputation and add the specimen to his museum for further study. You will appreciate that he might have to wait many years for the answer to the problem which puzzled him. He was a graduate of Trinity College, and held the license of the College of Surgeons of Ireland and the M.D. of Edinburgh. On one occasion he walked from Edinburgh to London a distance of 400 miles.

He abhorred statements loosely made without adequate foundation, and at his classes took every opportunity to repress premature theorising on the part of his pupils. It is stated that he often had 300 at a lecture. He taught regional anatomy with reference to its surgical bearing; you should know that up till that time teaching was by systems; the nerves, vessels, muscles, viscera, skeleton were studied as separate organizations. I quote from his Surgical anatomy "While systems of anatomy are multiplied beyond number, we have scarcely any elementary treatise the sole object of which is to describe the relative position of the parts, or to point out the subserviency of anatomical knowledge to surgical practise. To supply that defect for the pupils of this school is the design of the present book."

Sir Dominic Corrigan who was born in 1802 and graduated from Edinburgh did most of the work for which he was known before the age of 40. His studies on the heart and circulation aroused great interest because little had been done on this subject since Harvey's time two centuries earlier. Much of his teaching was done from the basis of six beds in Jervis St. Hospital. His studies on the left ventricle and aorta were done before he was 30 years of age. He described "Permanent patency of the mouth of the aorta or inadequacy of the aortic valves." He differentiated it from aortic stenosis, pointed out that death was never sudden, and insisted on the bad effects of bleeding, blisters, starvation and digitalis. He discussed aortitis as a cause of angina pectoris, and wrote on aneurism. In 1830 he wrote on epidemic fever in Ireland and the relation of typhus to starvation. (When I was a student typhus was supposed to be spread by emanations from the body of the sick person). In 1838 he published an article on cirrhosis or fibrosed lung and tubercular phthisis.

It was said of him that he never lectured more than half an hour. He left a dictum with regard to the subject of life insurance which suggests

that we are still discussing century old problems. "You should not answer questions about patients unless you have made a special examination." He was given a baronetcy for his work in a cholera epidemic, a rare honour for a R.C. in those days.

William Stokes was born in 1802, took clinical medicine and sciences in Dublin and in Edinburgh, came under the influence of Prof. Allison who stimulated him greatly. In 1825 he published a small treatise on the use of the stethoscope (Laennec). It was the first in Britain. Ten years later Sir H. Acland, then a student, had to withstand the ridicule of an able teacher for devoting himself to the mastery of it.

Appointment to the Meath Hospital in 1825 brought him friendship with Graves and the two started a salutary and much needed reform of clinical teaching. It drew crowds of students not only from England and Scotland but from the continent and America. It did not consist of spoon-feeding or cramming students with masses of facts available for purposes of examination, but in systematic effort to teach the individual pupil, to encourage him to learn, to show him how to teach himself, to bring him into the true relation in which he ought to stand with his instructor, to make him familiar with bedside medicine, to show him the value of every new fact and observation in medicine and to make him know the duty as well as make him taste the pleasure "of original investigation."

Stokes and Graves, in 1834, revolutionized the treatment of peritonitis. They stopped bleeding and purgatives and gave opium "to support the strength of the patient so as to gain time and diminish as far as possible the peristaltic action of the intestine." He appears to have been a great admirer of Laennec and crystallized the progress which seemed to have gone too far along one line. "The necessity," says Stokes, "for the close study of physical signs with the study of symptoms so as to illustrate their mutual bearing on diagnosis can remove that unjust opprobrium thrown on the advocates of auscultation that they neglect the study of symptoms."

He brings out a book on the treatment and diseases of the chest which was translated into German and said to be unequalled since the time of Laennec. In the section on bronchitis he says "It includes the consideration of topics which are remote from the inflammatory affections of the bronchi such as dilatation and atrophy of their terminations.

He received many honours but refused a knighthood. Thomas Carlyle visited but did not impress him. He expressed this opinion of the great author "During my lifetime I have met many who were bores but Carlyle was hypeborean."

The fame of those days may have left the Dublin doctors but one instance which I have never forgotten suggests that the spirit is not dead. Sir Thomas Myles, a leading surgeon, had asked one of the students to examine the knee of a patient and tell him what was the matter with it. There was the usual fumbling followed by a vocal perplexity. Myles stopped him with, "Mr. Blank, let me remind you that precise knowledge puts an end to all conversation."

The Present is a Chameleon

Our whole life long it is the present and the present alone that we actually possess: the only difference is that at the beginning of life we look forward to a long future, and that towards the end we look back upon a long past; also that our temperament, but not our character, undergoes certain well-known changes, which make the present wear a different color at each period of life.—Arthur Schopenhauer.

Nothing Sacred

A main fact in the history of manners is the wonderful expressiveness of the human body. If it were made of glass, or of air, and the thoughts were written on steel tablets within, it could not publish more truly its meaning than now. Wise men read very sharply all your private history in your look and gait and behavior. The tell-tale body is all tongues.—Ralph Waldo Emerson.

Editorial

J. C. Hossack, M.D., C.M. (Man.), Editor

Health and Ease For The Poor Patients

It is the custom in St. Bartholomew's Hospital for the Hospitaller to pray, on certain solemn occasions, "for the health and ease of the poor patients." It is presumed that all human measures have already been applied and that it is only for those distresses beyond the aid of man that divine assistance is being invoked. We offer no such prayers here, not, at least, by an official at public functions, which is, perhaps, a pity; because, if we did, it might lead to a little soul-searching and to the question whether or not we had done all we could do ourselves.

We are not guilty of many sins of omission but hospitals are flagrantly guilty of certain sins of commission which rob the patient of his ease by unnecessarily disturbing his rest. The nocturnal ritual of taking temperatures cannot be too strongly condemned. In ninety-nine cases out of a hundred there is probably no excuse for it. But it is a rule. I asked a nurse one time why she had disturbed a patient whose temperature was normal. "But" she answered "it has to go on the chart." It has to go on the chart! Ye gods! Were charts made for patients or were patients made for charts? No. The taking of normal temperatures at dawn, or even before the sun itself is stirring, is a custom much more honored in the breach than the observance.

For those who, through the long night, have prayed that sleep might weigh their eyelids down, how distressing it is to be jolted awake only a moment after the prayer has been answered. Elsewhere you will find Dr. Moorehead's story about the drunken Irishman who, awakened in hospital, thought he was in heaven, and saw in the white-clad nurses "God's own holy angels." No such thought enters the mind of the rudely awakened patient.

We are advised in a proverb to let sleeping dogs lie lest harm come to us. It is unfortunate that roused patients cannot retaliate as can roused dogs—unfortunate that not the arouser but the aroused must suffer from this wanton injury. For it is both wanton and injurious; wanton because needless; injurious because it stimulates an emotional response which is highly undesirable and which tends to retard recovery.

There were no thermometers when the Hospitaller of St. Bartholomew's first offered this prayer. In these days when thermometers are so numerous and so frequently misused let us remember that health and ease are synonyms. One cannot take away ease without at the same time taking away health, or, at least, denying that extra modicum of health which the interrupted ease would have given.

What is sleep? Sore labour's bath, balm of hurt minds, chief nourisher in life's feast! Why, then, drain the bath just filling, fling away the balm, and snatch the scarcely touched plate from the starving? The thermometer has its place, but that place is not the mouth of a drowsy patient who, after long wooing, has barely won the reluctant consent of nature's soft nurse. **Oh Lord, we beseech Thee, give health and ease to the poor patients.**

We can only read about the Tower of Babel but an idea of the noise that surrounded it we can hear in almost any hospital ward: voices high and deep, laughter loud and long, the machine-like clatter of many tongues, the raucous, harsh, shrill, groaning cacophonies that pour incessantly from loud speakers both human and mechanical—din hard enough to tolerate when one is well, intolerable when one is ill; proper enough in hotels and clubs but sorely out of place where men and women are striving to find rest, are fighting for their lives. **Oh Lord, we beseech Thee, give health and ease to the poor patients.**

And why must there be so much hospital visiting? Why do the lodge-brothers and lodge-sisters and the uncles and the cousins and the aunts—why do they visit in such numbers only when their friends are in hospital? And why must they come so often and stay so late? Patients well enough to enjoy large parties are well enough to go home. But to patients who are sick, much visiting by many visitors is hurtful, and most especially so when these are for others in the same room. Yet in almost every ward during visiting hours one will find a crowd of intruders sucking up the patients' oxygen and replacing it with their own halitosis and bromidrosis and tobacco smoke until they are finally driven forth by the stench of their own making. **Oh Lord, we beseech Thee, give health and ease to the poor patients.**

Everywhere throughout the land, throughout the world, new hospitals are rising. They are of the most modern design, are filled with the most modern equipment. Their offices are spacious, their laboratories magnificent, their post-mortem rooms palatial. But will they afford that quiet which means so much in bringing health and ease to the poor patients?

To be sure there is a place in hospitals for thermometers and radios and visitors. Visitors when few in number and of the right quality help convalescence. Quiet, pleasant, cheerful people are very welcome, for "the cheerful heart doeth good like a medicine." And no one will complain if

the radios be of the under pillow sort each delivering its quiet message to a solitary ear. Nor, indeed, might it be a bad idea to heed the poet's plea "And ever against eating cares, lap me in soft Lydian airs." Would it not be pleasant, when the bustle of the day is over, to hear such music whispering through the corridors, stealing into the porches of weary ears, sweetly numbing the brain like poppy or mandragora or other drowsy syrup, till it had seeped the senses in forgetfulness, and brought to every aching body and to every anxious mind a sleep, full of sweet dreams and health and quiet breathing? **Oh, Lord, we beseech Thee, give health and ease to the poor patients.**

In the midst of what is very new and very good can not a place be found for the very old that is still the best of all—peace and quiet? Spacious offices please the well. But the sick have little interest in them or in the magnificence of the laboratories. Nor do their thoughts turn often to the palatial post-mortem rooms except, perhaps, to think of those who lie in them with a little envy "For there at least" they will say "there is no noise nor any nurse with a thermometer!" **Oh Lord, we beseech Thee, give health and ease to the poor patients.**

Letter to the Editor

The Etiology of Cancer

All the work and investigation done on the transmission of cancer; all the evidence brought to light by the use of carcinogenic and anti-carcinogenic substances, are pervaded with the idea that malignancy is fundamentally a disorder of metabolism, either stimulating or inhibiting cell growth. When carcinoma starts, the catabolic exceeds the anabolic rate. There are some predisposing, and many other factors starting the initial damage or destruction to normal cells; irradiation by X and ultra-violet rays, bacterial and virus infections, trauma, chemicals, including the polycyclic hydrocarbons, tar, soot, etc. It is most likely that specific damaging factors produce and liberate specific phospholipids from the damaged cells; e.g., ordinary trauma liberates thromboplastin (phospholipid), which is immediately fixed by the thrombin to the fibrin cycle. Syphilitic damage to cells liberates specific phospholipids which become fixed by antibodies, causing partial or total immunity (the basis of the Kahn test).

Other diseases show a similar response, e.g., tuberculosis and malaria.

The important factor about most phospholipids is that they are building-stones in the production of the tissue cells.

A recent departure in biochemistry (biological, or chemically competitive antagonism) in the metabolism of cells of foodstuffs, shows how easy it is for a cell or bacterium to absorb certain chemicals in error for the natural or normal nutrient.

For example:

Acetyl pyridium for nicotinic acid
Sulfonamides for aminobenzoic acid
Pyrithiamine for thiamine
Gluco-ascorbic acid for ascorbic acid, etc.

From these examples, it is readily inferred that normal cells would easly assimilate phospholipids closely related to their own natural food phospholipids. The embryonic cells seem to be particularly vulnerable.

The evidences in favour of this hypothesis are many:

(1) When a cell is irradiated by X-rays the nucleus or nucleic acids causes mutation of phospho-compounds in the cell, e.g., nucleic acids and nuclear compounds, which become utilized as foodstuffs for adjacent cells.

(2) Phosphorus is one of the easily irradiated elements, hence the ready mutation of phospho-compounds.

(3) Phospholipids are readily assimilated by neoplasms.

(4) There is a greater percentage of phosphorus in cancerous tissue than in normal tissue.

(5) The phospholipids are carried by cholesterol; feeding of cholesterol stimulates the growth of cancer.

(6) Cancer mainly travels by the lymphatics, where there is greater concentrations of phospholipids and cholesterol.

(7) The "milk factor" in the reproduction of cancer is a heavy molecule, probably a phospholipid.

(8) In leucaemia and polycythaemia vera, phospholipids are readily taken up from the haemopoietic system, or blood stream. The action of urethane in control of leucaemia is probably due to the changing or destruction of the specific phospholipid used by the abnormal white cells.

(9) In the hydatidiform mole, the tumor may remain innocent in the uterine wall, but on damage to the mucous membrane, and liberation of new phospholipids, it becomes a chorionepithelioma.

(10) The action of aminopterin on the leucaemias is, undoubtedly, an intermediate factor (a phospholipid in the liver?). The giving of hormones is, apparently, not a primary factor in etiology, but simply stimulates, or inhibits, cell growth.

All this information relating to the transition of the normal to the malignant cell, points definitely to the possibility that cancer is a metabolic disorder.

An attempt at proving this hypothesis could possibly be accomplished by computing malignant cell growth in normal medium, against the lymph from the thoracic duct in individuals who have died of cancer, and this might have to be lymph from specific types of carcinoma.

Our knowledge of biochemistry of phospholipids will be greatly stimulated by research along these lines, and would bring all research work into one channel, namely, the metabolism of phospholipids and their relation to normal and malignant cell growth. Geo. C. Dodds.

Article

The Coroner: His Place in the Community

Dr. A. Gordon

"Is she to be buried in Christian burial that wil'ully seeks her own salvation?"

"I tell thee she is . . . and therefore make her grave straight. The crowner hath sat on her, and calls it Christian burial."

Hamlet, Act V, *Scene* I.

When William Shakespeare was writing these words in 1601 the office of Coroner was already some 400 years old, and his place in the community well established. The words of the grave diggers told the Elizabethan audience in no uncertain terms, what they already knew full well, with a shiver at the very roots of their hearts. The suicide, so pronounced by the coroner's jury, was to be buried in a crooked grave . . . at a crossroads . . . with a stake driven through his heart, so that the world might stamp over the evil spirit . . . pegged within the body by the stake: and should the stake not hold, the crossing roads forming a sacred symbol would securely hold it there.

In the eighth century King Alfred is said to have put a judge to death for sentencing a man to death on the coroner's record alone. The Bench was no sinecure in Alfred's day. He put fourteen other judges to death as well.

The name **"Coroner"** came from his first title: "Custodes Placitorum Coronae" . . . custodian of the pleas of the Crown, and one of the privileges accorded to the citizens of London by Henry the First, was that of electing their own coroner.

His office was a source of revenue to the Royal coffers: the bull that gored a man to death was, on the coroner's warrant, forfeited to the Crown as a deodand: but after the signing of Magna Carta, he (the coroner, not the bull) ceased to be so remunerative. From that time on, the Coroner's Court became a Court of Record . . . that is (to quote from the famous Blackstone) "A Court whereof the acts and judicial proceedings are enrolled for perpetual memory and testimony . . . which rolls are called the Rolls of the Court . . . and are of such high and supereminent authority, that their truth is not to be called in question . . . for it is a settled rule and maxim that nothing shall be averred against a record, nor shall any plea or proof be admitted to the contrary."

Today his duties are somewhat curtailed. He no longer enquires into the coming ashore of Royal Fish, whales or sturgeon . . . nor into the origin of fires (except in London where he still does so) . . . nor into the matter of Treasure Trove . . . nor into estates over the value of $300.00.

The Lord Chief Justice of England is the Supreme Coroner of England; and Judges of the High Court of Justice are also coroners by virtue of their office. There are also Country and Borough coroners, and coroners by appointment, the Canadian coroners are such.

In England there exists a very special coroner called the "Coroner of the Verge." His jurisdiction extends over a ten-mile radius round the person of the Sovereign wherever he may be. In ancient days this doubtless ensured a most discreet handling of certain incidents arising among the royal entourage, which otherwise might have resulted in more than a breath of scandal.

That eminent authority Lord Coke gave the following qualifications as necessary to the holder of the office of Coroner:

Honesty.

Of sufficient legal knowledge and understanding.

Of good ability and power to execute his office according to his knowledge.

Of diligence in attendance for the due execution of his office.

And these for three reasons:

The Law presumes he will do his duty and not offend the Law for fear of punishment whereunto his lands and goods are subject . . . (an ironic touch in my own case).

That he will be able to answer the King all such fines as belong to him, and to discharge the county thereof.

That he may execute his office without bribery. (Gentlemen, I blush).

The Coroner's court is essentially a Criminal Court, dealing to a limited extent with cases where the Criminal Code may possibly have been infringed.

So much for the background, a magnificent British background; and the spirit of this high tradition lifts the British and Canadian coroner far above the reach of the shower of strictures levelled by the American Press at an office which in its country has descended, in some cases to the

level of a mere political plum, and that a trifle over ripe. The United States is, however, already on the road to a splendid rectification with its appointments in some states of highly qualified Medical Examiners.

When death finally triumphs, and the medical battle is lost, the Law must be satisfied beyond a peradventure, if at all possible upon the following points:

WHO was the deceased . . . HOW . . . WHERE . . . WHEN . . . and BY WHAT MEANS DID HE MEET ITS DEATH? To discover these facts is the duty of the Coroner, his court and jury.

The Coroner is a judge in his own court with full judicial power . . . and the term "Crowner" is still used in England by the illiterate, those unwitting preservers of many an ancient tradition . . . from the medieval days when the coroner was "Custodes Placitorum Coronae."

When a medical man becomes a coroner he must become a sort of mental chameleon; and his viewpoint must undergo a sudden and radical change. Whenever he assumes his new role he is not for the moment concerned with the saving of life. He must now marshal his knowledge of medicine and the allied sciences, and bring it to bear upon the legal proof and unravelling of crime, or the no less important establishment of innocence or the absence of crime . . . For instance:

In a squalid room in a downtown block I found the body of a poor woman lying dead on her left side near the door so that entry was effected with difficulty. Post mortem lividity which as you know follows the law of gravitation and appears at points free from pressure, was in this case very apparent all along the right side . . . mute witness to the fact that the body had been moved since death . . . who had moved it? . . . Why? . . . Whence? I set the police enquiry afoot, and the answer came from the janitor: "I guess I moved her alright, 'cause when I pushed the door open she sort of rolled over like she is now" . . . so you see, gentlemen, the common explanation is often the most adequate. This mystery was thus quickly solved.

The dead body of an infant is to the doctor a corpse; but to the medical jurist it is a human sphinx . . . full of riddles: Mature or immature . . . Born alive or born dead . . . Was the child killed? . . . If so, how? . . . Was death natural? . . . If so, why? . . . and upon the answers may hang the life of a fellow man or woman, or the honour of a sister . . . thus the coroner must be a minute observer . . . and somewhat of a lover of Sherlock Holmes: but the longer he follows the trail the larger will be his book of unanswered riddles. Quite frequently the answer comes when least expected:

At 11 o'clock on a cold April morning with a sharp North wind blowing I was called to a footpath on the bank of the Red River, at the foot of St. John's Park. The police were in charge and had just cut down the body of a man, found hanging from a small tree inclined at a 20 degree angle to a 45 degree bank. He had been suspended by a cord made of 4-ply bindertwine. The bark of the limb showed fresh chafing, exposing the cambium layer. The remains of the cord were still on the limb; and in one of the strands was a little piece of bright red flannel closely interwoven. A deep ligature mark was present on the neck, tented under the occiput and presenting the classical distal marginal congestion. The rest of the body was cooling but it was of interest that the ligature mark was appreciably warmer to the touch . . . The deceased had been seen 20 minutes before discovery going through the park. He had spoken to the attendant . . . He was followed by his wife a few minutes later. She told the attendant that she feared for her husband.

Such was the case . . . a simple one of suicide by hanging . . . but there was a sequel. About a week later the wife came to my office, with an insurance death claim in her hand. She was angry at my presumption of suicide.

"How do you know he wasn't murdered?" she asked . . . I gave my reasons, and in reconstructing the scene I said: "There was a mystery, however," and told her of the red flannel fragment. She suddenly blurted out "Ah, that's the cord I roped my boxes with when we moved from Saskatchewan" . . . out of her mouth came the admission that the cord was obtained in her own home. She left the office madder than ever at her inadvertent contribution to the suicide aspect of the case. She didn't get the insurance . . . I was glad I hadn't missed the bit of red flannel.

The coroner finds himself functionally related to the Criminal Investigation laboratory experts, to the Pathologists, to the Crown, to the Police and to the Public.

Under the present system all technical forensic investigation is done under the R.C.M.P. at Regina. Excellent though that laboratory is, the time is long overdue for Manitoba to stand upon its own feet in this matter. The modern concept of criminal investigation requires a sharp increase in toxicological investigation. Manitoba is growing, and already, with investigation pared to the minimum, it is a common experience to await the return of toxicological reports for three weeks or more. The effect of impediment of police procedures is at once obvious; and in a given case might well prove disastrous.

The relations of the coroner with the pathologists is in our case particularly happy. The coroner supplies the pathologist with all details surrounding the case under investigation; and the mutual exchange of information makes it possible for the coroner's office to be of material benefit to the

Crown investigation. When, however, the prism of academic uncertainty breaks up the clear white light of Olympian pathological opinion into the rainbow of doubt and conjecture. The coroner leans across the autopsy table and says: "All t'world's mad, lad but me and thee . . . and sometimes I think thee's a little queer." It is then the coroner's duty to view the problem in the polarized light of his own Reason.

The Crown, in the person of the Attorney-General's Department, is represented at the Coroner's inquest as of right; and offers highly valuable legal guidance when necessary during the inquest. It has been made quite clear to this coroner, however, that many questions by the Crown is somewhat of a reflection on the coroner's ability. When all is going well in the inquest the Crown follows a policy of graceful Gilbertian deferment. Counsel for interested parties may ask questions only at the discretion of the coroner. This discretion is very freely given, and only withdrawn when an over zealous counsel attempts to build up a case for his clients. The place for that is in the higher court.

"The policeman's lot is not a happy one" says the G. and S. lyric; but an understanding coroner can greatly mitigate it, by prompt attendance at the scene, by expert assessment of the problem under investigation, by demonstration of classical signs and establishment of their relative importance, and by interpretation of the pathological evidence in layman's terms. He must also interpret the police function to the relatives and friends of the deceased. This last is quickly said but implies much more. My experience has shown me beyond a doubt that from its chief executive to its newest recruit you and I have cause to be proud of our police department . . . and this in spite of the parking ticket of last Wednesday.

The coroner's first relationship with the public is usually in the private home where death has struck suddenly, or in the factory, or in the rooming house, at the roadside, on the riverbank. In these trying situations although he is present in the capacity of investigator he finds many grand opportunities to exercise his humanitarian instincts . . . to dispel fear . . . to comfort a stricken heart . . . to guide a confused mind . . . and not infrequently to shield his medical colleagues from the barbed darts of criticism born of grief and ignorance. But there are pitfalls here too: One of us, who shall be nameless, going into a house, became absorbed in the investigation, till from the son of the deceased came the solemn admonition: "I think you might at least take off your hat in the presence of the dead." . . . That coroner's face was as though a perle of amyl nitrate had been broken beneath his nose . . . that hat came off and a profound apology came with it. A few days later that coroner went to the Jewish funeral parlor to open an inquest. The hat came reverently off but a firm voice said, "Never mind that Doc you don't have to do that here." So you see, gentlemen, sometimes the coroner just can't win.

At the inquest the coroner is in close contact with the public in its roles of juryman and witness: and if, as he should be, he is an interested student of human nature he will find much to learn, much to impart, and much to set him wondering.

That seven men picked almost entirely at random will be of widely varying mental ability is beyond argument: but that these seven will almost invariably bring in a correct finding in a given case if properly presented is a matter of considerable interest, and suggests that true justice is after all as simple as truth itself. The coroner's jury, however, must ever be reminded that its function is one of fact finding, and that no one is on trial in the coroner's court; yet in a case where the coroner was closely questioning a husband whose wife was found dead from starvation, in a room with all the windows boarded up and lighted by only one red electric bulb, a juryman rose during the questioning and said: "I wish to say a few words in defence of Mr. Smith." He was immediately but gently shown that no defence was necessary.

The jury's recommendaions very frequently result in the installation of factory safeguards, and many a level railway crossing signal is a visible evidence of the practical suggestion of the coroner's jury. You may be saved by one of these tomorrow night.

Lord Darling, that great and caustic ornament of the British judiciary, divided witnesses into two classes, professional and accidental. Both of these frequently appear in the coroner's court and I already find the true expert is simple in his presentation while the pseudo-expert is nebulous and irritable.

The accidental witness presents an interesting picture in psychological behaviour. He may show reluctance born of a deep dislike of publicity or notoriety, or even of sympathy. He would often rather let an injustice be done than undergo an appearance in the box.

He may show eagerness born of a love of the same publicity shunned and abhorred by his brother. He may be motivated by a subconscious desire to be an authority and the man of the moment. When dismissed with but a few questions he retires with a smile of triumph on his face which only leaves when he realizes that his evidence was not deemed worthy of more consideration.

He may, however, be equally impelled by a sense of being on the side of justice, or of being opposed to all organized forms of police and legal control. On the other hand he may be filled with a sense of friendship or partisanship.

When these psychological factors operate in minds of varying degrees of intelligence and education it is not at all impossible that a formidable melange of truth, emphasis, confusion, uncertainty, misrepresentation, together with a slight dash of perjury, may be injected into the evidence. All the emotional strings of the human harp are sounded; and the ensuing symphony is often hard to analyze. This is the coroner's duty and much depends on his skill in assessment of such evidence, which may be good, bad, or indifferent, coming as it does from competent, terrified, biased or stupid witnesses.

Checking the verbal flow of the garrulous witness is like trying to stem a Highland stream in spate; and I assure you that hell hath no fury like a woman so checked.

The grief-stricken witness must, of course, be handled with the utmost sympathy and consideration, while the earnest witness often produces a mass of trivial chaff which must be carefully winnowed for the grain of corn.

The impertinent witness soon lays himself open to the classical Gilbertian "Short, sharp shock," and he invariably gets it.

The child witness giving its evidence in a tense atmosphere of adult sympathy, often gives a sample of the purest truth and earns the love and respect of all who hear him. . . . You will all remember the murder of the so-called "Pussycat Woman." In that case two little boys who knew her well discovered the body. In the witness box one of them described the event as follows: "It was a cold, rainy night and we were sent to get the wood. The door was open as we went past and we saw a woman . . . (Mark that note of accuracy . . . Remember they knew her) with her hair all down over her face."

Counsel: "And what did you do next?"

Answer: "We went on and got the wood . . . but we came back . . . (what boy wouldn't?) and we hung around."

Counsel: "And what happened next?"

Answer: "And then a 'flatfoot' came."

You should have heard the shuffling of the legal feet in the court room . . . the face of the law . . . and there was a lot of it . . . was very red indeed.

In our community life the development of machines, speed, and the use of materials in industry and commerce, takes a lamentable toll of human life, that basic essential if the community is to continue. Death, the great disrupter of the even tenor of our way, is still to us a mighty mystery shrouded in grief, pain, fear, superstition and biochemistry. It is a grim challenge demanding an answer and prevention in that futile struggle for immortality by us who have not observed that man is already immortal, in his children. To me it is a stimulating thought that the coroner, his court and jury represent the commencement of that inquiry. That court free from many of the trammels of legal protocol represents the voice of a free people asking the questions How, Where, When and by What Means, this death occurred. The coroner's jury has power to inculpate, to exonerate, and to make recommendations for the prevention of catastrophe.

Let no facile legal planner's hand be laid against this great and basic prerogative of the people. After the foreman of the coroner's jury stands and reads the verdict the coroner reads it in open court. He may agree or disagree with it . . . but he cannot change it. That verdict takes its place in the record for as long as a record shall last.

Quaint verdicts do occur: and I shall always remember the one which closed with the words "We the jury wish to extend our deepest sympathy to the deceased."

"The coroner's relations with the medical profession are rather varied. He sees the doctor as the attending physician, at home, in the hospital, and in the witness box—and sometimes he sees him as a factor in medical disasters when through accident, through ignorance, or through both the unfortunate man comes under the spotlight of investigation. In these situations the coroner by interpreting the necessarily technical evidence in terms comprehensible to the jury enables that jury to assess the situation with minds unconfused, and freed from much preconceived bias based upon erroneous conceptions.

When through accident, sympathy, cupidity, or a grossly distorted sense of relative values, a doctor finds himself involved in cases of abortion or narcotic administration he stands in dire need of an understanding and intelligent mind on the bench at the coroner's inquest. As the public watches the progress of the investigation the whole profession stands in need of protection from the results of misapplied emphasis and unclarified implication.

Out of this last comes the realization that the medical witness should be well trained both in forensic medicine in general, and in inquest procedure in particular. This will never be, so long as forensic medicine receives the minimal consideration which it does in our university at present, where most of the lectures are given by a member of the legal profession. I would earnestly request that the Faculty of Medicine and the University of Manitoba take the necessary steps to establish a chair of forensic medicine. Internes properly trained would become an increasingly protective factor in the management of hospitals; and when released into practice would be made unforgettably aware of the pitfalls which await them. An increased knowledge of the relation of pathology to the forensic science would make them

a credit to the Alma Mater when giving evidence in the light of the cruelly critical public eye. Should they become coroners, as many of them will, the value of such training is indeed very obvious. Let me but a little show the need: I have seen an interne lounging in the witness box chewing placidly on a wad of gum. I have heard an interne having pronounced death, unable to state the time even as morning or afternoon.

I have heard an interne report a sudden coronary death to the coroner without mentioning the rather important fact that the deceased had fallen out of bed and was so found. In this case the hospital stands in danger of legal action when the tears of the relatives have ceased to flow, and the aspect of neglect becomes exaggerated by neighbor busybodies.

A forensic section of this body would not be amiss. Here the discussion of timely and important medico-legal problems by experts of the two professions would be of great value to the profession at large, and would in some measure serve to bridge the gap left in its training by the relegation of forensic medicine to a relatively nebulous and superficial consideration.

The coroner interested in scientific anomalies and peculiarities is occasionally rewarded quite unexpectedly by the sight of a heart presenting a congenital absence of the right coronary artery and a compensatory hypertrophy of the left one. This heart had survived the stress of life till the age of forty-seven.

In another case a man collapsing on the bowling green presented a bilateral coronary embolus.

Instantaneous cadaveric rigidity is a phenomenon very rarely seen, and not yet satisfactorily explained. Some time ago there was a drug robbery at Liggett's Drug Store where morphine, atropine and hyoscine were taken. The sequel followed almost immediately. Within a week there occurred four sudden deaths among known drug addicts. One of these I found totally unsupported, in the classical knee chest position, with rigor mortis established from head to feet. The body was on the floor midway between the bed and the wash basin, spoon in hand and the usual drug injection apparatus, consisting of eye dropper with taped tip and a fine hypo needle, lying beside it. Fresh needle puncture of the median basilic vein was present. The mystery remains unsolved, for the toxicological report from the R.C.M.P. laboratory at Regina was entirely negative, for all four of these sudden deaths. A hypothesis of microscopic multiple air emboli is still under consideration.

Strange deaths continue to occur, intriguing the imagination; and provoking a flow of much wisdom after the event. . . . One gusty summer afternoon I was called to Mile 4 just out of Winnipeg on the main line of the C.N.R. I found a section gang with its little yellow motor-speeder and flat trailer pulled off to the side of the ballast. Lying between the east and west-bound lines was the body of a young strong-looking workman, just recently dead. There were no marks of violence . . . no history of a quarrel . . . no history of illness. The gang had arrived on the speeder just after lunch and were starting to work at changing some ties.

The foreman spoke to the lad, turned his back for a moment and on turning again found him lying on the ballast, dead. He had neither spoken, cried out, nor coughed. The post mortem was entirely negative until the last two minutes, when examination of the larynx disclosed a small spindle shaped wad of gum firmly fixed between the vocal cords allowing free airway on either side . . . cause of death . . . sudden cardiac arrest due to reflex vagal inhibition.

At 4.30 p.m. on a bitterly cold day last January, I arrived at a tenement on Lily St., and climbing a noisome and crazy stair by the light of a police torch I came into a dismal room, almost completely filled by a bed, a bureau and 2 chairs. In the dim light of a small carbon bulb, a picture of indescribable squalor was revealed. The temperature of the room was 50 degrees. In an 18-inch space between foot of bed and wall lay the body of a man half on its left side on the floor. A pillow under the head was almost saturated with blood . . . not yet dry, but wet and clotting. The face was cyanosed, and there was fresh blood at the nostrils . . . the body was cooling. Rigor mortis was present to the ankles. Post mortem lividity conformed to the position when found. Rectal temperature was 86 deg. at 5.15 p.m. From these data one fixed the time of death at about 9 a.m. of this day (8.5 hours before).

The body was fully clothed and wore heavy shoe packs. There was a ticket to Port Arthur in the pocket together with a discharge slip from Deer Lodge Hospital showing an investigation for peptic ulcer.

Deceased was known to the tenant of this room, who stated that the man had come at 11 p.m. the previous night, saying "I'm all in." The tenant had thrown him a pillow saying: "Bunk down there at the foot of the bed." When morning came he had gone out leaving the visitor to "sleep it off."

Post mortem showed asphyxial petechiae in classical "collar" formation at base of the neck on the chest. There was a heavy odor of beer on opening the body. Lungs congested with patches of emphysema . . . Bronchi filled with glairy tenacious mucoid material . . . Heart normal . . . Upper Respiratory tract clear of mechanical obstruction . . . some mucus present. Trachea . . . deeply congested . . . livid and containing glairy

bloody mucus . . . Bronchi occluded with glairy mucus . . . Stomach showed no trace of ulcer . . . Other organs normal.

Reconstruction of this dismal tale gives a picture of partial prolonged asphyxia while drunk. Epistaxis supervening completed the asphyxia as the pillow became saturated.

Inscrutable indeed are the ways of providence. Post mortem on a sudden death showed advanced Bright's disease, profound anaemia and terminal broncho-pneumonia. There was also evidence of marked avitaminosis. The erstwhile physician reporting on this case told me that the patient had left his supervision to become a Christian Scientist after a gastrectomy by Dr. Thorlakson.

In my series of cases to date I must regretfully report a mortality of only 98.6% . . . due to the unexpected recovery of one case of carbon monoxide poisoning.

If, however, I have succeeded in demonstrating the coroner's office as an integral part of the great legal machine set up by the people for the purpose of the preservation of good, the punishment of evil, and the protection of the citizen in the state, I have achieved my original purpose.

Book Reviews

Stress

The important theories advanced by Dr. Hans Salye have evoked so much interest the world over that a vast amount of literature has already accumulated. For the special as well as for the general reader covering this literature is a tremendous task which threatens each year to become more tremendous.

In order to lighten this burden there is to be published each year an "Annual Report on Stress." In order that the scope, arrangement and purpose of this Annual Report may be given clearly, the authors' own words are here quoted in extenso.

The volume, it should be understood, supplements but does not replace the original work.

"The scope of the Annual Reports." This book is not meant to act as an abstract journal, but as a treatise. As such, it has to fulfil the dual task of a guide to the entire literature on stress and of a critical correlator of pertinent facts.

As I am dictating these lines my eyes happen to fall upon three reviews on the General-Adaptation-Syndrome, which I keep on the shelf above my desk. They are dated 1937, 1946 and 1950 respectively, and I note with amusement that in the first of these I was able to quote only 30, in the second, 698 and in the third, more than 5,500 references, on what appeared to be pertinent subjects at these times. The present report, which is meant to act as the first annual supplement to "Stress," had to deal with about 3,000 references, almost all of which were published during the past academic year!

How to use these Annual Reports. These books are not meant to be read from cover to cover. A few remarks about their structure will help to point out how I think they should be used.

In order to include the entire annual literature on stress in a single volume, it became necessary to evolve a somewhat unusual form of presentation. I hope that this style will facilitate a clear, succinct description of the complex data, but it will certainly not make for interesting reading, except possibly for experts perusing the subject matter in their particular fields.

In view of the large number of topics that had to be considered, it was not possible to preface each section only in the case of a few, very complex, or very new subjects. My main endeavor has been to make the report highly informative; even, when necessity dictated, at the expense of being dry. As far as possible, the material is described in brief, simple sentences. Usually, each one of these (and often even several parts of the sentence) bears an inconspicuous, small superscript number, which does not interfere with readability and readily leads to the pertinent publications upon which the statement is based.

To facilitate orientation, the general structure of presentation is constantly emphasized by the running heads, on each page, and by the many sub-titles, printed in type indicative of their relative importance. Throughout the text, block letters and italics are used exclusively to denote the subdivision of the subject matter and not to indicate importance.

The future readers of this book will presumably have widely different questions to ask. Hence, as I have said, only very few of them will find it rewarding to read the entire material in the order in which it is presented. Every effort has been made, therefore, to expedite the task of finding specific information concerning any one problem without having to wade through lengthy discussions on unrelated topics. To accomplish this, all the material is presented in close adherence to the general structure outlined in the table of contents and the book has been supplemented by a very detailed subject index.

Those who wish to study broad subjects, dealt with in special sections, will find it convenient, first, to consult the table of contents. From the latter it will be evident that the entire volume is subdivided into two main sections as follows:

A. The general physiology and pathology of stress, which includes: a synopsis of the stress-concept as it presents itself in 1951, a discussion of the principal objections against the stress-concept, a section on definitions and terminology, as well as a brief characterization of the "stressor agents" and of the "adaptive hormones."

B. The special physiology and pathology of stress, in which data concerning the action of stress upon the various "targets" are systematically presented. Not only individual organs (e.g., kidney, liver), but even metabolic changes (e.g., glycogen, hyaluronidase content of tissues) and certain functional responses, not readily characterized by morphologic or chemical alterations (e.g., resistance to damage, inflammation), have been considered as "targets" for the structural organization of our material.

In relation to each target (e.g., the blood-vessels) the relevant data are listed under the following headings:

(1) Effects of non-specific stressors (e.g., effect of trauma upon vessels).

(2) Effects upon the responsiveness of the target to stressors, of specific stimuli influencing the G-A-S. Among these are the "adaptive hormones," nervous responses, and other endogenous factors which participate in adaptive reactions (e.g., effect of corticoids upon vessels).

(3) "Diseases of Adaptation," which affect this target organ in particular (e.g., periarteritis nodosa).

(4) Theories concerning the interpretation of the above-mentioned data (e.g., mechanism through which trauma or corticoids may affect vessels).

(5) Wherever the relevant literature is particularly complex or contradictory a brief summary is appended, in order to give most prominence to what I consider to be the best established and most important part of the preceding section.

In order to simplify orientation, as far as possible, all the "stressors" and all the "stimu'i" are always discussed in the same order.

The subject index will prove particularly useful to those who do not have the time to study the general structure of the volume carefully. It will also help whenever it is desirable to investigate thoroughly and completely those subjects to which no special section has been assigned. For instance, a reader interested in all the information concerning STH (including its chemistry and pharmacology, its effect on various organs and metabolic processes, its influence upon resistance to infection, as well as the theories proposed for the evaluation of pertinent data), will save time by merely turning to the STH entries in the index, because there is no special chapter on STH. The rather self-explanatory symbols which have been employed, and explained in a brief passage which prefaces the index.

Attention is called to the fact that this technique of presentation conforms in every respect to that used in "Stress." It is planned to arrange the material in all future "Annual Reports on Stress" in the same manner. Hence, a reader interested in data concerning any target will merely have to look up the corresponding sections, first in "Stress," and then in the "Annual Reports on Stress" for each intervening year.

Summary

(1) If you are in great haste, consult this book only through the subject index for specific data, or look up the section "References" for individual papers.

(2) If you have some time, first, read "The general physiology and pathology of stress" and then only the special chapters concerning your field of interest.

(3) If the study of stress, as such, is your principal field of interest, first read this volume from cover to cover for up-to-date orientation, and then consult individual chapters whenever special problems arise.

Annual Report on Stress. by Hans Selye, M.D., Ph.D. (Prague); D.Sc. (McGill), F.R.S. (Canada), Professor and Director of the Institut de Medecine et de Chirurgie experimentales Universite de Montreal. ACTA, Inc., Medical Publishers, Montreal. 644 + 22 pages. Price $10.00. Purchasers are advised to obtain the volume direct from the publishers.

Diseases of the Nervous System

W. Russel Brain

Ignorance of neurological disorders is neither so common nor so great as it used to be, although the nervous system is still the most difficult one for general comprehension. Moreover it is less easy for the practitioner to keep abreast of neurological advances.

Therefore, not only undergraduates but graduates also have need for an authoritative and modern source of information. And, further, for both student and practitioner, the most desirable text is one that is large enough to be comprehensive, small enough to be concise, written with such clarity as to be readily understood, and with a sufficient number of illustrations to make important points clear. Russel Brain's book satisfies all these requirements. Now in its fourth edition it is probably the best book of its class.

In no other system is a knowledge of anatomy and physiology so necessary for the proper understanding of symptoms. Brain intersperses these basic data throughout his book. The first section is devoted to "Disorders of Function in the light of Anatomy and Physiology." Here symptoms and

signs are considered as examples of abnormal function of structures whose normal actions are discussed at the same time. This leads one to think in terms of function rather than to rely on memory of syndromes. This plan is applied to all parts of the nervous system and furnishes a much more useful approach to nervous disease than would separate chapters on anatomy and physiology as such.

Other divisions of the book deal with neoplasms, vascular disorders, injuries, infections, congenital disorders and intoxications, degenerations. Each division is subdivided into chapters in which are considered all the usual, most of the unusual and some of the rare, manifestations of nervous disorders. There are chapters also on disorders of the peripheral nerves, of the muscles, of the autonomit nervous system, of the bones of the skull, etc. The psychological aspects of neurology are also given space.

The logical arrangement and clear expression present throughout the whole work makes reading easy and aids comprehension; and its completeness makes it a useful book for reference.

Diseases of the Nervous System. by W. Russel Brain, D.M. (exon.) P.R.C.P. (London), Physician to the London Hospital and to the Maida Vale Hospital for Nervous Diseases, etc. Fourth Edition. 1002 pages, illustrated, Oxford Medical Publications: Toronto, 1951. Price $7.50.

Prosthetists and Orthotists Service

A clearinghouse service on competent, ethical technicians specializing in braces, limbs, plastic eyes, or facial and body prostheses is being established. Qualified dentists doing obturator work or plastic eyes are included. Information will be available to all members of the medical profession on request.

Please assist this NEW service by forwarding names and addresses of qualified technicians and dentists to Academy-International of Medicine, 214 West Sixth St., Topeka, Kansas.

The Eighth Annual Meeting of the American College of Allergists

The next annual meeting of the American College of Allergists will be held this year at the William Penn Hotel in Pittsburgh, Pennsylvania, on April 7, 8, 9. The College is offering an unusually practical programme for its fellows, members and guests.

In addition to 20 addresses on general topics and special scientific investigations, there will be round tables at luncheons and sectional meetings devoted exclusively to the psychosomatic aspects of the allergic patient, allergy in infants and children, allergic manifestations in the skin, as well as those seen in the eye, ear, nose and throat.

An innovation for meetings of allergists will be a session devoted to the problems of the allergic patient as met in modern industrial medicine. All reputable physicians are welcome to attend. For more particulars, write the College, LaSalle Medical Building, Minneapolis 2, Minnesota.

Frantal Methylsulfate

Manufacturer — Schering Corporation Limited, Montreal.

Active Constituent — Diphenmethanil methylsulfate (N, N-dimethyl—4—piperidylidene—1, 1—diphenylmethane methylsulfate).

Action—Anticholinergic agent.

Advantages—because of its selectivity of action, side effects such as mydriasis, dryness of mouth, urinary retention, and constipation are rarely produced.

Indications—Peptic ulcer and other conditions where it is desirable to reduce gastric acidity and motility of the stomach. Also effectively curtails hyperhidrosis.

Dosage—One 100 mg. tablet four times daily. Continue four to six weeks. In some cases it may be advisable to modify the dosage depending upon severity or for maintenance of the case.

Packaging — 100 mg. tablets, scored, bottles of 100.

Ciba Assists Research Department

Commencing this year Ciba and Company Limited have initiated an annual grant of seventy-five dollars to the Department of Physiology and Medical Research to assist in the purchase of scientific journals.

As the Departmental Library is a branch of the Main Library these journals will be available to all members of the profession. This gift will materially relieve the burden on the members of the Department who previously have personally purchased these publications.

College of Physicians and Surgeons of Manitoba

Registration Committee

July 18, 1951

Enabling Certificates Granted

Tet Hyun Pang, M.B., B.S., National Sun Yat Sen U., Canton, 1948.

Si Chow (James) Tang, M.B., B.S., National Sun Yat Sen U., Canton, 1949.

Mieczyslaw Franciszek Emil Koziol, M.B., Ch.B., U. Warsaw, 1946; M.R.C.S., England, 1950; L.R.C.P., London, 1950.

James Edward Nelles, M.D., C.M., Queen's U., 1950; L.M.C.C., 1950.

Francis Karl Fleming, M.D., U. Ottawa, 1951; L.M.C.C., 1951.

Fischel Jerome Coodin, M.D., C.M., Queen's U., 1947; L.M.C.C., 1947.

Tadeusz Jerzy Halkiewicz, M.D., U. Lwow, 1938; L.M.C.C., 1951.

Betty Marjorie Lowe (Clifford), M.B., B.S., U. Sydney, N.S.W., 1944.

John Edmund Royds, M.B., Ch.B., St. Andrew's U., 1938; M.R.C.P., London, 1947.

George Alexander Barclay Cowan, M.B., Ch.B., U. Glasgow, 1944.

Certificate of Licence Granted

Louis Murray Mink, M.D., U. Toronto, 1950; L.M.C.C., 1950.

Executive Committee

September 6th, 1951

A meeting of the Executive Committee of the College of Physicians and Surgeons of Manitoba was held in the Medical Arts Club Rooms at 8 o'clock p.m. (D.S.T.), on Thursday, September 6th, 1951.

Present: Dr. C. B. Stewart, Chairman; Dr. B. D. Best, Dr. Edward Johnson, Dr. J. S. Poole, Dr. C. H. A. Walton, Dr. F. K. Purdie (Vice-President), Dr. T. H. Williams (Treasurer), Dr. M. T. Macfarland (Registrar). Mr. David H. Jones of Dilts, Baker, Laidlaw and Shepard, acted for Mr. T. W. Laidlaw who was unable to be present.

Regrets were received from Dr. I. Pearlman who was unable to be present.

The minutes of Council Meeting held on May 23rd were distributed, but no action was taken.

1. Business Arising from Council Committee Meeting, May 23rd, 1951

A. Disciplinary By-law

The Disciplinary By-law accepted by Council was specifically intended to cover offenses not serious enough to warrant erasure, but the final penalty of the By-law was erasure.

The matter was discussed with the solicitor whose written opinion on August 31st, 1951, was that Item 6 on Page 4 in the draft By-law (Erasure of name from membership in the College of Physicians and Surgeons) be deleted. The power to erase a name from the Register is covered by the Medical Act.

Motion: "THAT Item 6 on Page 4 of the Disciplinary By-law (Erasure of name from membership in the College of Physicians and Surgeons) be deleted as advised by the solicitor." Carried.

B. Chiropodists

The Registrar reported that he had written a letter dated June 8th, to the Secretary, Association of Chiropodists—Manitoba, in reply to which he had received an invitation to meet and discuss the matters mentioned with the members of the Council of the Chiropodists' Association.

C. Auditors

Dr. Macfarland stated that the auditors had been notified. As the College year terminates on September 30th, and the annual meeting of Council will be held in early October, it is hoped that the audit may be completed during the first week of October.

D. Date of Annual Council Meeting

The suggested date was October 9th, the afternoon on which Princess Elizabeth and the Duke of Edinburgh would visit Winnipeg. It was the feeling of members that since October 9th will probably be proclaimed a public holiday in honour of the Royal Visit, the annual meeting should follow, rather than precede the Annual Meeting of the Manitoba Medical Association.

Motion: "THAT the Annual Meeting of Council be held in the Board Room, Medical College, at 10 o'clock a.m. (S.T.), on Saturday, October 13th, 1951." Carried.

E. Discontinuation of Interneship

The Registrar reported that in accordance with the resolution of Council agreeing in principle with the proposals put forth by the Faculty Council Executive, University of Manitoba, that the obligatory undergraduate year be discontinued, and that appropriate action be undertaken, he had contacted the solicitor on August 17th but that no draft legislation had yet been prepared.

Notice of motion had also been presented at the May meeting of Council that the 1948 requirement of one year's interneship prior to the issuance of an Enabling Certificate or licence be reconsidered at the annual meeting.

It was pointed out that the sections of the Medical Act which would require amendment would be 31, 32, 33, 33A, and possibly 75. It was agreed that in amendment to Section 33 no reference should be made to the Certificate of Credit under the Basic Sciences Act.

Motion: "THAT the solicitor be requested to prepare appropriate amendments in accordance with resolution of Council (May 23rd) and the discussion of this Executive, prior to the Annual

Meeting of Council in October." Carried.

F. Registrars' Meeting (Montreal)

Motion: "THAT the report of the Registrars' Meeting be deferred until Council Meeting in October." Carried.

G. Increased Fee for Enabling Certificate

At the May meeting there was agreement in principle with the increase of the fee for Enabling Certificates, for other than graduates of the University of Manitoba, to Twenty-five Dollars ($25.00) of which Twenty Dollars ($20.00) would be credited to subsequent registration fee. This matter was discussed with the solicitor on August 17th whose opinion was that while Council has power to establish the fee, Notice of Motion is advisable.

H. Specialist Register

In accordance with the resolution of Council the Registrar consulted the solicitor (T.W.L.) on August 17th and again (D.H.J.) on September 5th. Mr. David H. Jones was present at the meeting and presented a draft By-law for discussion by the Executive. It was agreed, by resolution, that the By-law should be re-drafted for presentation to the Council meeting in October with the following suggestions:

1. The list may include a person whose name, prior to January 1st, 1954, is on the list of specialists to be prepared by a committee appointed for that purpose by the Council of the College of Physicians and Surgeons of Manitoba.

2. The committee appointed to prepare a list of specialists shall consist of SIX MEMBERS, two representatives from the College of Physicians and Surgeons appointed by Council, OF WHOM ONE SHALL BE CHAIRMAN OF THE COMMITTEE, two from the Faculty of Medicine of the University of Manitoba, and two from the Manitoba Association. This Committee would continue to function until January 1st, 1954.

3. For applications received after January 1st, 1954, Council may exercise discretionary power.

The Registrar indicated that letters had been prepared for the Faculty of Medicine, University of Manitoba, and the Manitoba Medical Association requesting each body to nominate two members to the Committee. It was agreed that as names are selected by one organization, notification be passed along to prevent duplication.

Motion: "THAT Dr. M. T. Macfarland, Registrar, and Dr. C. H. A. Walton be the representatives from the College of Physicians and Surgeons on the Specialist Committee." Carried.

I (a) Electoral Districts

The resolution that the Medical Act be altered to give Council power to establish Medical Electoral Districts was discussed with the solicitor on August 17th but no draft legislation has yet been prepared.

Motion: "THAT the solicitor be requested to prepare appropriate amendment to the Medical Act which would authorize Council to establish Medical Electoral Districts and to alter the boundaries of such districts." Carried.

I. (b) Homeopathy

It was questioned whether, in amending the Medical Act, reference to licensed Homeopathic Practitioners in the Province (Sections 5d, 6, 11, 12, 13, 76, and 77 refer).

Motion: "THAT no amendment to the Medical Act concerning Homeopathic Practitioners be considered at this time." Carried.

The Registrar was requested to report any change in the number of Homeopathic Practitioners.

J. Liaison Committee

It was agreed at the May Council meeting that the sum payable monthly by the College of Physicians and Surgeons to the Manitoba Medical Association for rental, light, phone, etc., after September 1st, should be determined by this body following a meeting of the Liaison Committee. No meeting of the Committee has yet been convened.

2. University of Manitoba (Re Basic Sciences)

The Registrar reported receipt of a letter dated June 28th, 1951, from the Registrar, University of Manitoba, enclosing a list of medical practitioners other than graduates of the University of Manitoba who have been granted the Certificate of Credit under the Basic Sciences Act. Information was requested of the names currently enrolled in the Register of the College of Physicians and Surgeons as practising doctors in this Province. A copy of the reply which had been prepared was read to the Executive Committee.

Motion: "THAT the Registrar comply with the request of the Registrar, University of Manitoba, and send a copy to the Council representative on the University of Manitoba Senate." Carried.

3. Letter from Miss Jean Allison

The Registrar presented a letter dated August 14th in which the recently appointed Assistant to the Registrar outlined her visit to the offices of the General Medical Council of Great Britain.

4. Canadian Arthritis & Rheumatism Society

The Registrar reported that there had been some criticism by members of the profession of the manner in which the recent campaign for funds had been carried out. The matter will probably be discussed at a meeting of the Medical Advisory Committee to be held on Friday, September 7th.

5. Communications

(a) American Medical Association

The Registrar presented a letter dated August 21st, 1951, from Frank V. Cargill, Director, Directory Department, who enclosed a revised proof of Manitoba names for the 1952 Directory requesting that alterations be made.

(b) Canadian Red Cross

On October 4th, 1950, a request was received from the Red Cross Blood Transfusion Service that specially trained nurses be allowed to do the bleeding. Council suggested that the bleeding should be done under medical supervision, and the Executive Committee later expressed the opinion that a doctor should be available at short notice, preferably on the premises in which the donations of blood are being made.

A verbal communication from the recently appointed Provincial Medical Director, Dr. G. E. Large, indicates that this Province is the only one in which such restrictions are imposed. The National Commissioner, Dr. W. S. Stanbury, hoped to arrange a meeting during his week-end visit, September 1st to 3rd. It was suggested that he communicate with the College in writing, and that Dr. Large might appear before Council if considered necessary.

(c) Michigan State Board of Registration

The Registrar presented a letter dated August 27th, 1951, from the Secretary, Michigan State Board of Registration, in which was enclosed the latest revisions of the Rules and Regulations of the Michigan State Board of Registration in Medicine. It was agreed that this matter be brought to the attention of Council.

(d) Hospital for Mental Diseases—Selkirk

The Registrar presented a letter dated June 29th, 1951, from the Medical Superintendent, Hospital for Mental Diseases, Selkirk, Manitoba, advising that Dr. ..... was admitted to Hospital on June 26th suffering from a mental illness. Dr. ..... admission to Hospital was on an Order of Commitment.

Motion: "THAT a statement of Dr. ..... competency to practise be secured for the Council meeting in October, and that a further statement of his competency to practise be secured upon discharge from hospital." Carried.

It was agreed that the solicitor be requested to advise concerning a By-law for automatic suspension from practice of a physician member who is admitted as a patient to a mental hospital.

(e) Letter From Mr. Graham Spry

The Registrar reported receipt of a letter from Mr. Graham Spry, Agent General in the United Kingdom and Europe for the Province of Saskatchewan, requesting regulations governing admission of doctors to practise in Manitoba and offering his services to interview prospective candidates for private and governmental practise. In his reply the Registrar acknowledged the offer of assistance and added, "Many applicants are under the impression that there is a shortage of doctors in Manitoba, and that hospital interneships are abundant and remunerative. Both statements have, of course, been greatly exaggerated!"

6. Unfinished Business

(a) Fees for Armed Forces

The Registrar reported that while no word of a decision that the Department of National Defence would pay the registration fee for Medical Officers in the armed forces has been received, it is anticipated that the officer will be able to claim reimbursement for the annual fee necessarily paid to the College to maintain his standing.

(b) Postgraduate Facilities for Commonwealth Physicians

A communication dated March 29th from the Medical Council of Pakistan inquired if further word concerning postgraduate opportunities had been received from the Canadian Medical Association. In reply to a letter dated May 14th, addressed to the Association an answer dated May 18th indicates that the problem rests with the licensing bodies and medical schools.

On May 16th, 1951, a letter addressed to the Secretary, Manitoba Division of the Canadian Medical Association, was received from Mr. P. K. Banerjee, Acting High Commissioner for India in Canada, Ottawa, Ontario, requesting postgraduate training facilities for qualified doctors from India.

A letter dated June 19th, 1951, addressed to the Registrar was received from S. C. Sen, Honorary General Secretary, Indian Medical Association. S. C. Sen states that he has several candidates for postgraduate training in various subjects, and he inquires if there is any possible way of helping these young people to secure appointments in Winnipeg.

7. Resignation of Doctor J. S. Poole

Doctor Poole, a senior member on Council and representative to the Medical Council of Canada, intimated that he would attend and preside over the deliberation of the latter body, of which he is president, but that he would be unable to attend the Annual meeting of Council on October 13th. Doctor Poole indicated that he will be moving to Victoria, B.C. to reside, and expressed the wish that he be permitted to resign from Council.

Motion: "THAT this Executive recommend to Council that the resignation of Dr. J. S. Poole be accepted with regret, and that suitable entry of appreciation for many years of faithful service to the profession be inscribed in the minutes." Carried.

Registration Committee

September 19, 1951

Enabling Certificates Granted

Kenneth Yu-Mien Hsu, B.Sc., St. John's U., Shanghai, 1939; M.D., St. John's U., Shanghai, 1942.

Gunther Semelka, M.D., U. Innsbruck, Austria, 1947.

Michel Stepan, M.D., U. Louvain, Belgium, 1939.

Teodor Muczij, M.D., Karl's U., Prague, 1928.

Markus Scherz, M.D., U. Brussels, 1941.

Enabling Certificate Deferred

Wasyl Zajcew, M.D., U. Berlin, 1943.

Certificates of Registration Confirmed

Harold Madill Barker, B.Sc., U. Man., 1942; M.D., U. Western Ontario, 1950; L.M.C.C., 1950.

Edward Huan Shu Chia, M.D., Cheeloo U., 1942; L.M.C.C., 1951.

Alwin Robert Parchment, B.A., Emmanuel Missionary College, Michigan, 1941; M.D., College of Medical Evangelists, 1950; L.M.C.C., 1951.

Certificates of Registration Granted

Glenn Elven Blackwelder, M.D., College of Medical Evangelists, 1947; L.M.C.C., 1948.

Reginald Champagne, M.D., U. Laval, 1950; L.M.C.C., 1951.

Elizabeth Cziller, M.D., Elizabeth Royal Hungarian U., Budapest, 1926; L.M.C.C., 1951.

Henry Ernest Devlin, M.B., B.Ch., U. Dublin, 1944.

Franz Kozin, M.D., Graz U., Austria, 1934; L.M.C.C., 1951.

Maurice Arthur Patrick McGrath, L., L.M., R.C.P., Irel., 1942; L., L.M., R.C.S., Irel., 1942.

Charles Herbert Read, M.D., C.M., McGill U., 1943; L.M.C.C., 1943.

Certificate of Licence Confirmed

Wilfred Napoleon Peter Albi, M.D., U. Ottawa, 1951; L.M.C.C., 1951.

George Watt Chapman, M.D., Stanford U., California, 1944; L.M.C.C., 1951.

Certificate of Licence Granted

George Eugene Large, M.D., C.M., Queen's U., 1939; L.M.C.C., 1939.

Social News

Reported by K. Borthwick-Leslie, M.D.

Dr. and Mrs. W. A. Shaver, with sons James and Bruce, have returned to their home in Minneapolis, having spent a few days visiting relatives and renewing friendships in town.

♦

L. Rubin, M.D., announces the opening of his office at 406 Boyd Bldg., Winnipeg. Practice limited to Obstetrics and Gynaecology. The very best for the future, Doctor.

♦

At Torquay, England, on Feb. 23, Patricia Ann, daughter of Mr. and Mrs. Bryant of Paighton Devon, England, was united in marriage with Dr. Eric C. H. Lehmann, formerly of Winnipeg. Dr. Eric is the son of the late Dr. J. E. Lehmann of Winnipeg and Mrs. Lehmann now residing in Montreal, Quebec. When he has completed his post graduate studies in England Dr. and Mrs. Eric Lehmann will reside in Vancouver, B.C.

♦

Dr. and Mrs. M. R. MacCharles are reported to be somewhere in transit re the United Nations Tour. Mac is supposed to be in Burma, Mrs. Mac in Geneva, and eventually they meet in Ceylon and so on. Wonderful opportunity to see this world at first hand.

♦

Dr. A. C. Abbott and Dr. Russell Cleave are having a wonderful time in Australia. All play, no work. Imagine spending two months fishing, shooting, chasing big game, small game, any kind of game. I wonder whether I'll enjoy the hula hula, probably on crutches, when Junior has finished his studies!

Mr. and Mrs. Wm. Patton (nee Dr. Donna Cruikshank) are happy to announce the birth of Andrew John, Feb. 25th.

♦

In New York, Feb. 17th, Dr. and Mrs. R. L. Cooke report the birth of their second child, a son.

♦

Dr. and Mrs. R. M. Chadwick (our Rodney) announce the birth of Pamela Joy in London, England. A sister for Saxon Lee.

♦

Dr. and Mrs. D. E. Bergsagel (nee Joyce Sigurdson) announce the arrival of a daughter, Feb. 13th, in Salt Lake City, Utah.

♦

Dr. and Mrs. Sterling Orr Dowling announce the birth of a daughter, Feb. 8th.

♦

Dr. and Mrs. M. J. Lehmann, B.Sc., M.D., F.R.C.S. (C), are happy to announce the arrival of their second daughter, Ruth Claire, on Feb. 9th, at the Pavilion.

♦

Dr. and Mrs. J. J. Asseltine, Fort Garry, are happy to announce the birth of Karey June, Feb. 21st.

♦

It is with regret that we learn of the death in Vancouver of Dr. Percy Bell. News of his illness, arrived last week, but now his death. May we extend our sympathy, personally and on behalf of the profession, to his family and friends.

Department of Health and Public Welfare

Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1951 Jan. 1 to Jan. 26,'52	1951 Dec. 2 to Dec. 29,'51	1950 Jan. 1 to Jan. 27,'51	1950 Dec. 3 to Dec. 30,'50
Anterior Poliomyelitis	0	2	0	0
Chickenpox	138	241	175	220
Diphtheria	1	1	1	1
Diarrhoea and Enteritis, under 1 yr.	1	10	2	7
Diphtheria Carriers	0	0	0	0
Dysentery—Amoebic	0	0	0	0
Dysentery—Bacillary	0	0	1	0
Erysipelas	3	2	1	2
Encephalitis	0	0	0	0
Influenza	5	8	4	11
Measles	146	100	322	319
Measles—German	0	2	3	1
Meningococcal Meningitis	0	1	0	0
Mumps	151	192	146	155
Ophthalmia Neonatorum	0	2	0	0
Puerperal Fever	0	0	0	0
Scarlet Fever	67	69	60	44
Septic Sore Throat	1	5	4	3
Smallpox	0	0	0	0
Tetanus	0	0	0	0
Trachoma	0	0	0	0
Tuberculosis	27	70	27	0
Typhoid Fever	0	2	0	0
Typhoid Paratyphoid	0	0	0	0
Typhoid Carriers	0	0	0	0
Undulant Fever	0	1	0	1
Whooping Cough	31	59	23	83
Gonorrhoea	93	98	114	99
Syphilis	8	11	12	12
Jaundice (Infectious)	2	0	0	0

Four-Week Period, January 1st to January 26th, 1952

DISEASE (White Cases Only) *Approximate population	*771,815 Manitoba	*861,000 Saskatchewan	*3,825,000 Ontario	*2,952,000 Minnesota
Anterior Poliomyelitis	—	—	3	18
Chickenpox	138	238	3349	—
Diarrhoea and Enteritis, under 1 yr.	1	—	1	—
Diphtheria	1	—	5	5
Diphtheria Carriers	—	1	—	—
Dysentery—Amoebic	—	—	—	1
Dysentery—Bacillary	—	—	4	5
Encephalitis Epidemica	—	—	2	—
Erysipelas	3	4	4	—
Influenza	5	—	19	1
Jaundice, Infectious	2	1	22	10
Measles	146	96	1626	116
German Measles	—	83	420	—
Malaria	—	—	—	—
Meningitis Meningococcal	—	3	9	7
Mumps	151	325	1908	—
Ophthal. Neonat.	—	—	—	—
Puerperal Fever	—	—	—	—
Scarlet Fever	67	168	229	84
Septic Sore Throat	1	16	3	10
Smallpox	—	—	—	—
Tetanus	—	—	—	—
Trachoma	—	—	—	—
Tularemia	—	—	—	5
Tuberculosis	27	23	102	9
Typhoid Fever	—	1	3	—
Typh. Para-Typhoid	—	—	—	1
Typhoid Carrier	—	—	—	—
Undulant Fever	—	—	3	—
Whooping Cough	31	65	114	8
Gonorrhoea	93	—	202	—
Syphilis	8	—	45	—

*DEATHS FROM REPORTABLE DISEASES

For the Month of January, 1952

Urban—Cancer, 51; Influenza (480-483), 1; Pneumonia, Lobar (490), 1; Pneumonia (other forms) (491-493), 8; Pneumonia of Newborn (763), 1; Poliomyelitis, 1; Tuberculosis, 5; Neoplasms of unspec. nature (230-9), 1; Benign Neoplasms (210-291), 1. Other deaths under 1 year, 32. Other deaths over 1 year, 228. Stillbirths, 11. Total, 271.

Rural—Cancer, 33; Influenza (480-483), 2; Measles, 1; Pneumonia, Lobar (490), 6; Pneumonia (other forms) (491-493), 4; Pneumonia of Newborn (763), 2; Tuberculosis, 4; Diarrhoea and Enteritis (571.0), 1; Diarrhoea of newborn, (764), 1. Other deaths under 1 year, 15. Other deaths over 1 year, 173. Stillbirths, 12. Total, 200.

Indians—Influenza, 1; Pneumonia (other forms) (491-493), 6; Diarrhoea and Enteritis (571.0) (white on reservation), 1; 1 Indian; total of 2; Septicaemia and pyaemia, 1. Other deaths under 1 year, 2. Other deaths over 1 year, 1. Total, 3.

*The above figures include 1951 registrations received in 1952, January 1st to February 12th, 1952.

♦

This is the first report for 1952. **Chickenpox, Measles, Mumps and Scarlet Fever** are still quite prevalent.

Diphtheria—One case reported, diagnosis clinical only and not confirmed by laboratory.

Jaundice (Infectious) is now a reportable disease. Two cases were reported in the first four-week period.

Poliomyelitis seems to have changed its seasonal incidence to some extent. Both Ontario and Minnesota report **January cases.**

Detailmen's Directory

Representing Review Advertisers in this issue, whose names are not listed under a business address.

Abbott Laboratories
G. J. Bowen — 44 559
R. G. (Bud) Harman — 592 648
D. A. Tedford — 724 863

Allen & Hanburys Co.
H. W. Heaslip — 39 401
E. M. Tackaberry — 404 184

Ayerst, McKenna and Harrison
W. R. Card — 49 829
C. G. Savage — 34 558

British Drug Houses
F. J. Burke — 38 413
W. B. Pipes — 935 802

Ciba Company Ltd.
J. T. Dewar — 402 540
Fred Ruppel — 422 769

Connaught Laboratories
Brathwaites Ltd. — 922 635

Frosst, Chas. E.
W. M. Lougheed — 403 963
W. J. McGurran — 208 231
E. R. Mitchell — 402 132

General Electric Co. X-ray Dept.
W. A. Martin — 924 277

Horner, Frank W.
Gordon Couch — 404 920
George D. Craine — 201 822

Mead Johnson
George Moore — 404 007

Merck & Co.
W. G. Ball — 45 702

Ortho Pharmaceutical Corp.
J. G. Johnston — 926 642

Park, Davis & Co.
L. W. Curry — 401 138
B. S. Fleury — 404 315

Sandoz Pharmaceuticals Ltd.
H. D. Robins — 39 936

Schering Corp. Ltd.
Halsey Park — 404 346

Shuttleworth, E. B.
S. M. Fairclough — 30 158

Swift Canadian Company
H. A. Plant — 209 833
Cam Loptson — 48 135

Squibb & Son, E. R.
MacArthur, J. H. Don — 404 741
E. E. Conway — 64 274

Will, Chas R.
John R. Hope — 401 883

Winthrop-Stearns
Geo. Edmonds — 49 744
R. M. Kelly — 34 580

Wyeth & Bro., John
A. W. Cumming — 35 271
W. J. Tarbet — 423 495